

M1_01 (MA13011): Algebra / Knowing Type: MC Key: A
 Label: Find an equivalent fraction

COUNTRY	N	DIFF %	A %	B %	C %	D %	E %	OMITTED %	NOT REACHED %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1328	43.8	43.8	17.7	5.3	17.5	10.3	4.8	0.5	41.4	45.9
Italy	1103	57.7	57.7	12.0	7.7	12.2	4.5	5.3	0.7	61.0	55.9
Lebanon	385	78.6	78.6	3.1	1.5	1.0	11.4	2.7	1.8	78.9	78.4
Norway	853	23.0	23.0	21.9	13.8	26.7	7.9	6.2	0.4	19.6	25.1
Portugal	1353	60.5	60.5	16.0	4.1	9.7	6.8	2.0	0.9	61.2	59.6
Russian Federation	2522	57.6	57.6	13.3	12.6	9.2	5.7	1.3	0.3	57.7	57.5
Russian Federation 6hr+	1151	77.1	77.1	8.8	5.6	4.3	2.7	1.1	0.4	76.6	77.4
Slovenia	981	55.1	55.1	12.9	6.1	20.3	3.7	1.5	0.3	54.5	56.1
Sweden	1321	20.4	20.4	12.0	11.7	41.2	7.4	6.2	1.2	16.1	23.2
United States	977	42.2	42.2	13.6	7.8	30.0	4.4	1.7	0.3	42.0	42.3
International Avg (n=9)	10823	48.8	48.8	13.6	7.8	18.6	6.9	3.5	0.7	48.0	49.3

DIFF = Percent correct
 Because of missing gender information, some totals may appear inconsistent.

M1_02 (MA13012): Algebra / Knowing Type: MC Key: C
 Label: Cubing a trigonometric function

COUNTRY	N	DIFF %	A %	B %	C %	D %	E %	OMITTED %	NOT REACHED %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1328	36.7	1.5	9.2	36.7	32.2	12.5	7.3	0.6	33.4	39.7
Italy	1103	23.8	3.4	11.5	23.8	33.7	10.9	15.9	0.8	24.3	23.5
Lebanon	385	77.0	1.9	3.7	77.0	8.1	5.1	2.4	1.8	78.0	76.5
Norway	853	21.5	1.9	13.0	21.5	44.2	8.1	10.8	0.6	19.3	22.8
Portugal	1353	35.3	1.8	6.1	35.3	30.7	15.6	9.1	1.4	35.3	35.3
Russian Federation	2522	35.1	2.1	10.0	35.1	35.5	11.1	5.9	0.3	34.4	35.9
Russian Federation 6hr+	1151	47.6	0.7	5.1	47.6	31.2	10.1	4.9	0.4	46.6	48.5
Slovenia	981	21.5	3.5	8.2	21.5	32.9	26.7	7.0	0.3	21.1	22.1
Sweden	1322	30.7	3.6	18.2	30.7	27.2	13.1	5.6	1.6	28.5	32.2
United States	977	25.1	2.9	6.0	25.1	40.5	20.1	5.0	0.4	22.7	27.6
International Avg (n=9)	10824	34.1	2.5	9.5	34.1	31.7	13.7	7.6	0.9	33.0	35.1

DIFF = Percent correct
 Because of missing gender information, some totals may appear inconsistent.

M1_03 (MA13013): Algebra / Applying Type: MC Key: E
 Label: Value of x to make function negative

COUNTRY	N	DIFF %	A %	B %	C %	D %	E %	OMITTED %	NOT REACHED %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1328	55.8	7.4	13.8	4.5	10.1	55.8	7.3	1.0	52.0	59.4
Italy	1103	56.1	4.8	20.4	5.7	5.6	56.1	6.2	1.1	59.9	54.0
Lebanon	385	65.2	5.6	12.6	4.8	3.6	65.2	6.2	1.9	67.9	63.7
Norway	853	44.8	6.7	17.7	9.1	11.0	44.8	10.2	0.6	48.6	42.5
Portugal	1353	58.7	9.2	11.6	5.4	7.7	58.7	5.6	1.8	60.0	57.2
Russian Federation	2522	68.4	5.9	9.8	5.8	6.9	68.4	2.9	0.3	68.1	68.7
Russian Federation 6hr+	1151	82.2	2.8	4.8	2.3	4.7	82.2	2.6	0.6	82.0	82.4
Slovenia	981	48.6	9.7	17.0	7.8	11.5	48.6	5.1	0.3	48.7	48.4
Sweden	1321	34.0	9.8	17.3	13.8	13.4	34.0	9.6	2.1	28.5	37.7
United States	977	51.8	7.9	22.0	5.9	9.3	51.8	2.7	0.4	46.9	57.0
International Avg (n=9)	10823	53.7	7.5	15.8	7.0	8.8	53.7	6.2	1.1	53.4	54.3

DIFF = Percent correct
 Because of missing gender information, some totals may appear inconsistent.

M1_05 (MA13015): Calculus / Knowing Type: MC Key: C
 Label: Derivative of exponential function

COUNTRY	N	DIFF %	A %	B %	C %	D %	E %	OMITTED %	NOT REACHED %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1328	79.8	5.7	8.5	79.8	1.6	2.0	1.0	1.4	80.7	78.9
Italy	1103	61.7	9.9	12.1	61.7	10.0	2.7	2.1	1.4	64.5	60.1
Lebanon	385	86.9	1.4	2.8	86.9	1.2	1.6	3.3	2.8	84.4	88.2
Norway	853	72.9	7.3	7.6	72.9	6.7	1.4	2.9	1.2	75.4	71.3
Portugal	1353	65.4	5.6	14.3	65.4	6.7	2.9	2.8	2.2	67.2	63.3
Russian Federation	2522	61.8	11.5	14.2	61.8	9.5	1.6	1.1	0.3	64.6	59.0
Russian Federation 6hr+	1151	68.9	11.1	10.1	68.9	7.5	0.6	1.1	0.6	69.9	68.1
Slovenia	981	43.9	17.7	13.0	43.9	19.7	4.3	1.1	0.3	44.6	42.9
Sweden	1321	48.3	16.2	15.2	48.3	9.8	4.9	3.1	2.5	49.3	47.7
United States	977	70.7	6.8	10.2	70.7	8.1	2.4	1.3	0.4	69.0	72.5
International Avg (n=9)	10823	65.7	9.1	10.9	65.7	8.1	2.6	2.1	1.4	66.6	64.9

DIFF = Percent correct
 Because of missing gender information, some totals may appear inconsistent.

M1_06 (MA13016): Calculus / Applying Type: MC Key: D
 Label: Cylinder radius with maximum volume

COUNTRY	N	DIFF %	A %	B %	C %	D %	E %	OMITTED %	NOT REACHED %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1328	24.7	13.2	21.7	16.8	24.7	13.6	8.6	1.4	23.3	26.0
Italy	1103	28.6	7.5	14.9	16.0	28.6	17.3	14.0	1.7	25.5	30.3
Lebanon	385	18.6	14.7	13.5	17.4	18.6	8.9	24.1	2.8	20.9	17.5
Norway	853	27.8	9.8	18.5	16.2	27.8	18.9	7.7	1.2	28.7	27.3
Portugal	1353	28.4	6.5	11.8	15.2	28.4	29.2	6.6	2.4	26.0	31.1
Russian Federation	2522	45.2	8.0	14.1	14.0	45.2	15.4	3.0	0.4	45.3	45.1
Russian Federation 6hr+	1151	52.3	8.6	13.8	9.3	52.3	13.4	1.9	0.7	49.1	55.0
Slovenia	981	34.6	9.2	14.2	15.4	34.6	20.3	6.1	0.3	30.3	40.7
Sweden	1321	31.1	10.3	19.7	15.4	31.1	13.4	7.6	2.6	30.9	31.2
United States	977	31.2	9.8	15.3	20.1	31.2	20.6	2.5	0.4	29.7	32.8
International Avg (n=9)	10823	30.0	9.9	16.0	16.3	30.0	17.5	8.9	1.5	28.9	31.3

DIFF = Percent correct
 Because of missing gender information, some totals may appear inconsistent.

M1_07 (MA13017): Geometry / Applying Type: MC Key: E
Label: Equation of perpendicular line

COUNTRY	N	DIFF %	A %	B %	C %	D %	E %	OMITTED %	NOT REACHED %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1328	25.7	25.3	8.2	11.8	9.8	25.7	16.0	3.3	23.1	28.0
Italy	1103	40.1	19.1	5.7	9.6	13.0	40.1	9.3	3.2	44.0	37.9
Lebanon	383	53.0	18.8	3.3	8.4	8.0	53.0	4.0	4.6	58.9	49.9
Norway	853	22.7	25.5	9.5	17.2	10.5	22.7	12.8	1.8	23.4	22.3
Portugal	1353	35.6	26.7	5.5	11.9	10.5	35.6	6.4	3.5	36.5	34.5
Russian Federation	2521	36.5	26.8	6.7	12.4	9.0	36.5	7.9	0.7	36.9	36.1
Russian Federation 6hr+	1151	45.2	28.9	3.1	9.1	6.5	45.2	6.3	0.9	42.5	47.5
Slovenia	981	46.5	17.6	6.5	12.2	10.5	46.5	6.0	0.7	46.8	46.0
Sweden	1321	18.7	26.9	11.3	18.9	12.7	18.7	6.9	4.6	16.7	20.0
United States	977	49.7	21.6	4.6	12.1	9.5	49.7	2.1	0.4	50.5	48.9
International Avg (n=9)	10820	36.5	23.1	6.8	12.7	10.4	36.5	7.9	2.5	37.4	36.0

DIFF = Percent correct
Because of missing gender information, some totals may appear inconsistent.

M1_08 (MA13018): Geometry / Knowing Type: MC Key: B
 Label: Difference of two vectors

COUNTRY	N	DIFF %	A %	B %	C %	D %	E %	OMITTED %	NOT REACHED %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1328	80.3	0.7	80.3	12.4	0.7	1.3	0.8	3.8	81.8	78.9
Italy	1103	36.9	3.3	36.9	28.1	7.0	4.5	16.3	3.9	38.2	36.1
Lebanon	385	72.2	2.2	72.2	12.6	1.6	2.2	4.5	4.7	78.3	69.0
Norway	853	79.5	0.6	79.5	14.0	0.6	1.3	1.6	2.3	82.7	77.5
Portugal	1353	71.3	0.6	71.3	21.9	0.8	0.5	0.8	4.1	71.8	70.7
Russian Federation	2522	73.7	0.9	73.7	19.6	1.3	2.8	0.7	1.1	74.6	72.8
Russian Federation 6hr+	1151	76.9	0.6	76.9	18.4	0.8	1.7	0.3	1.4	75.3	78.1
Slovenia	981	47.3	3.6	47.3	32.2	7.6	2.8	5.7	0.7	46.6	48.2
Sweden	1321	37.4	4.3	37.4	29.2	8.9	6.5	7.6	6.1	33.4	40.1
United States	977	59.0	1.6	59.0	30.2	2.5	3.1	2.9	0.8	57.4	60.7
International Avg (n=9)	10823	61.9	2.0	61.9	22.2	3.5	2.8	4.6	3.1	62.8	61.6

DIFF = Percent correct
 Because of missing gender information, some totals may appear inconsistent.

M1_09 (MA13019): Geometry / Applying Type: MC Key: B
Label: Equation representing set of points

COUNTRY	N	DIFF %	A %	B %	C %	D %	OMITTED %	NOT REACHED %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1328	17.3	26.4	17.3	26.9	7.2	18.3	3.8	15.5	18.9
Italy	1103	20.4	21.3	20.4	21.3	9.7	19.5	7.9	18.7	21.3
Lebanon	385	34.6	14.1	34.6	17.7	9.6	17.5	6.4	36.8	33.4
Norway	853	26.6	23.1	26.6	28.8	7.8	11.2	2.4	24.3	28.0
Portugal	1353	17.5	23.3	17.5	35.7	7.7	11.3	4.5	15.0	20.2
Russian Federation	2522	28.6	25.4	28.6	25.2	10.0	9.7	1.1	28.6	28.5
Russian Federation 6hr+	1151	34.8	24.6	34.8	20.0	12.0	7.1	1.4	35.9	34.0
Slovenia	981	18.6	25.7	18.6	36.0	6.6	11.1	2.1	15.2	23.3
Sweden	1321	22.6	25.7	22.6	29.2	9.2	6.3	7.0	22.2	22.8
United States	977	22.4	25.0	22.4	38.2	6.8	6.0	1.6	20.6	24.4
International Avg (n=9)	10823	23.2	23.3	23.2	28.8	8.3	12.3	4.1	21.9	24.5

DIFF = Percent correct
Because of missing gender information, some totals may appear inconsistent.

M1_10 (MA13020): Geometry / Applying Type: MC Key: C
 Label: Value of vector in triangle

COUNTRY	N	DIFF %	A %	B %	C %	D %	E %	OMITTED %	NOT REACHED %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1328	48.2	12.2	11.8	48.2	6.1	8.0	5.8	7.9	44.3	51.9
Italy	1103	17.9	13.1	17.2	17.9	9.8	12.8	17.5	11.7	15.3	19.3
Lebanon	385	43.9	10.3	4.7	43.9	6.5	10.0	14.4	10.2	43.1	44.4
Norway	853	49.3	10.1	12.3	49.3	6.5	10.4	5.2	6.1	45.2	51.8
Portugal	1353	29.8	19.0	13.3	29.8	8.1	12.7	9.0	8.2	28.6	31.0
Russian Federation	2522	45.4	19.9	12.6	45.4	6.6	8.5	4.0	2.9	44.4	46.4
Russian Federation 6hr+	1151	55.8	15.8	8.5	55.8	4.2	8.5	4.5	2.7	55.3	56.1
Slovenia	981	42.1	15.9	13.6	42.1	7.8	10.0	6.6	4.0	40.3	44.8
Sweden	1320	18.4	18.3	25.8	18.4	13.7	8.3	7.4	8.2	20.3	17.1
United States	977	30.1	21.6	22.9	30.1	8.6	11.3	3.5	2.0	31.3	28.8
International Avg (n=9)	10822	36.1	15.6	14.9	36.1	8.2	10.2	8.2	6.8	34.8	37.3

DIFF = Percent correct
 Because of missing gender information, some totals may appear inconsistent.

M2_01 (MA33086): Algebra / Knowing Type: MC Key: A
Label: Absolute value of parabola partly below x-axis

COUNTRY	N	DIFF %	A %	B %	C %	D %	OMITTED %	NOT REACHED %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1328	62.2	62.2	22.8	2.0	12.1	0.9	0.0	52.9	70.8
Italy	1103	60.2	60.2	24.7	7.9	3.9	3.2	0.0	62.5	59.0
Lebanon	384	70.0	70.0	20.9	4.6	3.4	1.1	0.0	64.2	73.1
Norway	853	54.5	54.5	28.5	5.6	8.8	2.6	0.0	47.0	59.0
Portugal	1353	85.5	85.5	7.4	1.9	4.8	0.3	0.0	85.2	85.9
Russian Federation	2522	71.5	71.5	12.3	6.2	9.6	0.4	0.0	68.1	74.9
Russian Federation 6hr+	1151	84.0	84.0	3.5	6.3	5.8	0.4	0.0	78.5	88.6
Slovenia	981	88.3	88.3	6.3	4.4	0.6	0.5	0.0	88.5	88.0
Sweden	1322	43.0	43.0	20.4	9.1	26.4	1.1	0.0	33.5	49.3
United States	977	54.0	54.0	14.3	1.1	29.1	0.9	0.5	47.3	61.1
International Avg (n=9)	10823	65.5	65.5	17.5	4.8	11.0	1.2	0.1	61.0	69.0

DIFF = Percent correct
Because of missing gender information, some totals may appear inconsistent.

M2_02 (MA33225): Algebra / Knowing Type: CR 2 Points
Label: Polynomials satisfying conditions (DERIVED)

COUNTRY	N	20 %	10 %	70 %	79 %	OMITTED %	NOT REACHED %	V1 %	V2 %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1328	43.8	15.2	10.9	27.3	2.8	0.0	59.0	43.8	37.9	49.2
Italy	1103	31.3	18.7	12.7	30.3	7.0	0.0	50.0	31.3	33.4	30.2
Lebanon	385	66.8	11.8	5.9	13.6	1.9	0.0	78.6	66.8	67.3	66.5
Norway	853	17.8	32.1	12.1	34.5	3.6	0.0	49.9	17.8	18.3	17.4
Portugal	1353	43.0	20.3	12.0	22.4	2.2	0.0	63.3	43.0	42.4	43.8
Russian Federation	2522	45.8	9.6	5.4	35.7	3.5	0.0	55.4	45.8	45.7	45.8
Russian Federation 6hr+	1151	63.4	6.1	3.1	24.9	2.5	0.0	69.5	63.4	60.1	66.1
Slovenia	981	67.1	11.9	6.8	14.0	0.3	0.0	79.0	67.1	64.5	70.7
Sweden	1321	32.5	17.5	11.4	36.9	1.7	0.1	50.0	32.5	32.1	32.7
United States	977	53.4	13.8	4.6	27.2	0.5	0.5	67.2	53.4	51.5	55.4
International Avg (n=9)	10823	44.6	16.8	9.1	26.9	2.6	0.1	61.4	44.6	43.7	45.8

V1 = Percent scoring 1 pt or better; V2 = Percent scoring 2 pts; Percent right for boys and girls corresponds to percent obtaining full credit.
Because of missing gender information, some totals may appear inconsistent.

M2_02A (MA33225A): Algebra / Knowing Type: MC Key: A
 Label: $(x-3)^2(x-5)$

COUNTRY	N	DIFF %	A %	B %	OMITTED %	NOT REACHED %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1328	64.4	64.4	31.0	4.6	0.0	58.8	69.4
Italy	1103	57.3	57.3	27.8	14.9	0.0	64.0	53.6
Lebanon	385	83.2	83.2	12.6	4.2	0.0	85.3	82.2
Norway	853	62.0	62.0	30.5	7.5	0.0	56.5	65.3
Portugal	1353	67.9	67.9	28.7	3.4	0.0	66.7	69.3
Russian Federation	2522	60.6	60.6	32.9	6.5	0.0	59.5	61.8
Russian Federation 6hr+	1151	73.0	73.0	22.6	4.4	0.0	70.4	75.1
Slovenia	981	80.9	80.9	18.3	0.8	0.0	78.6	84.3
Sweden	1321	59.6	59.6	34.6	5.7	0.1	58.9	60.2
United States	977	70.9	70.9	26.6	2.0	0.5	68.9	73.0
International Avg (n=9)	10823	67.4	67.4	27.0	5.5	0.1	66.4	68.8

DIFF = Percent correct
 Because of missing gender information, some totals may appear inconsistent.

M2_02B (MA33225B): Algebra / Knowing Type: MC Key: B
 Label: $(x-3)^3(x-5)^3$

COUNTRY	N	DIFF %	A %	B %	OMITTED %	NOT REACHED %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1328	71.7	23.2	71.7	5.1	0.0	66.6	76.3
Italy	1103	68.2	21.8	68.2	10.0	0.0	73.8	65.2
Lebanon	385	81.3	13.7	81.3	5.0	0.0	80.6	81.7
Norway	853	67.4	24.4	67.4	8.2	0.0	67.1	67.5
Portugal	1353	76.1	20.6	76.1	3.3	0.0	76.0	76.2
Russian Federation	2522	61.5	30.9	61.5	7.6	0.0	61.5	61.4
Russian Federation 6hr+	1151	71.7	22.5	71.7	5.9	0.0	69.9	73.1
Slovenia	981	84.9	13.4	84.9	1.7	0.0	84.4	85.7
Sweden	1321	63.3	32.5	63.3	4.1	0.1	62.9	63.6
United States	977	70.7	27.1	70.7	1.7	0.5	70.6	70.9
International Avg (n=9)	10823	71.7	23.1	71.7	5.2	0.1	71.5	72.1

DIFF = Percent correct
 Because of missing gender information, some totals may appear inconsistent.

M2_02C (MA33225C): Algebra / Knowing Type: MC Key: B
 Label: $(x+3)^2(x+5)$

COUNTRY	N	DIFF %	A %	B %	OMITTED %	NOT REACHED %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1328	77.0	17.1	77.0	5.8	0.0	77.6	76.5
Italy	1103	60.5	27.1	60.5	12.4	0.0	58.7	61.5
Lebanon	385	86.5	8.2	86.5	5.3	0.0	88.5	85.5
Norway	853	46.5	45.7	46.5	7.8	0.0	47.8	45.7
Portugal	1353	74.5	21.1	74.5	4.5	0.0	76.1	72.6
Russian Federation	2522	81.3	9.7	81.3	9.0	0.0	82.9	79.8
Russian Federation 6hr+	1151	87.5	4.5	87.5	8.0	0.0	86.9	88.0
Slovenia	981	88.4	9.4	88.4	2.2	0.0	87.3	89.9
Sweden	1321	69.9	24.2	69.9	5.8	0.1	69.5	70.2
United States	977	81.5	15.6	81.5	2.4	0.5	79.2	83.9
International Avg (n=9)	10823	74.0	19.8	74.0	6.1	0.1	74.2	74.0

DIFF = Percent correct
 Because of missing gender information, some totals may appear inconsistent.

M2_02D (MA33225D): Algebra / Knowing Type: MC Key: A
 Label: $(x-3)(x-5)^2$

COUNTRY	N	DIFF %	A %	B %	OMITTED %	NOT REACHED %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1328	64.0	64.0	30.4	5.6	0.0	58.5	69.0
Italy	1103	60.4	60.4	28.0	11.6	0.0	64.3	58.3
Lebanon	385	81.7	81.7	12.7	5.6	0.0	83.2	80.9
Norway	853	60.5	60.5	31.4	8.2	0.0	58.4	61.7
Portugal	1353	66.8	66.8	28.3	4.9	0.0	67.4	66.2
Russian Federation	2522	60.1	60.1	32.2	7.7	0.0	60.4	59.8
Russian Federation 6hr+	1151	73.4	73.4	20.7	5.9	0.0	72.1	74.4
Slovenia	981	81.7	81.7	17.0	1.3	0.0	79.4	85.0
Sweden	1321	59.9	59.9	33.4	6.6	0.1	60.7	59.3
United States	977	70.7	70.7	25.9	2.9	0.5	68.5	73.0
International Avg (n=9)	10823	67.3	67.3	26.6	6.1	0.1	66.8	68.1

DIFF = Percent correct
 Because of missing gender information, some totals may appear inconsistent.

M2_02E (MA33225E): Algebra / Knowing Type: MC Key: B
Label: (x-5)3

COUNTRY	N	DIFF %	A %	B %	OMITTED %	NOT REACHED %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1328	82.0	11.9	82.0	6.0	0.0	81.1	82.9
Italy	1103	67.7	19.9	67.7	12.4	0.0	66.1	68.6
Lebanon	385	85.4	8.4	85.4	6.2	0.0	88.0	84.1
Norway	853	72.1	20.1	72.1	7.8	0.0	73.9	71.0
Portugal	1353	84.2	12.1	84.2	3.7	0.0	83.7	84.7
Russian Federation	2522	77.8	13.7	77.8	8.5	0.0	76.2	79.3
Russian Federation 6hr+	1151	86.0	6.9	86.0	7.1	0.0	86.4	85.6
Slovenia	981	92.4	5.7	92.4	1.9	0.0	92.2	92.5
Sweden	1321	70.2	23.6	70.2	6.2	0.1	68.8	71.1
United States	977	88.3	9.1	88.3	2.1	0.5	86.5	90.2
International Avg (n=9)	10823	80.0	13.8	80.0	6.1	0.1	79.6	80.5

DIFF = Percent correct
Because of missing gender information, some totals may appear inconsistent.

M2_03 (MA33142): Algebra / Reasoning Type: CR 1 Point
 Label: Evaluate alternating expression when $x=3$

COUNTRY	N	10 %	79 %	OMITTED %	NOT REACHED %	V1 %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1328	30.9	43.1	26.0	0.0	30.9	22.9	38.4
Italy	1102	29.3	46.2	24.5	0.0	29.3	17.8	35.6
Lebanon	385	31.1	44.7	24.2	0.0	31.1	27.0	33.2
Norway	853	22.5	56.1	21.4	0.0	22.5	15.0	27.1
Portugal	1353	29.4	42.1	28.4	0.0	29.4	23.2	36.2
Russian Federation	2522	50.0	36.7	13.3	0.0	50.0	46.1	53.9
Russian Federation 6hr+	1151	60.0	29.9	10.1	0.0	60.0	55.9	63.4
Slovenia	981	19.7	65.2	15.1	0.0	19.7	13.2	28.9
Sweden	1321	28.4	57.7	13.8	0.1	28.4	22.5	32.4
United States	977	30.0	63.2	6.3	0.5	30.0	23.1	37.3
International Avg (n=9)	10822	30.1	50.6	19.2	0.1	30.1	23.4	35.9

V1 = Percent scoring 1 pt or better; V2 = Percent scoring 2 pts; Percent right for boys and girls corresponds to percent obtaining full credit.
 Because of missing gender information, some totals may appear inconsistent.

M2_04 (MA33044): Algebra / Applying Type: MC Key: C
Label: Sum of geometric series alternating signs

COUNTRY	N	DIFF %	A %	B %	C %	D %	OMITTED %	NOT REACHED %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1328	39.6	16.1	21.9	39.6	13.5	8.9	0.0	32.4	46.2
Italy	1103	25.6	14.2	30.5	25.6	10.4	19.3	0.0	18.1	29.8
Lebanon	385	32.5	19.8	14.7	32.5	11.4	21.6	0.0	32.5	32.6
Norway	853	50.2	12.8	17.9	50.2	13.2	5.9	0.0	41.4	55.5
Portugal	1353	37.8	12.0	23.5	37.8	14.6	12.1	0.0	32.1	44.1
Russian Federation	2522	53.3	12.6	17.0	53.3	13.9	3.0	0.0	50.0	56.8
Russian Federation 6hr+	1151	62.8	10.4	10.2	62.8	12.1	4.6	0.0	55.6	68.8
Slovenia	981	43.9	14.0	20.4	43.9	11.9	9.7	0.0	38.9	51.1
Sweden	1321	44.9	14.2	17.0	44.9	18.2	5.6	0.1	41.4	47.2
United States	977	47.5	11.7	20.2	47.5	15.9	4.2	0.5	43.3	52.0
International Avg (n=9)	10823	41.7	14.2	20.4	41.7	13.7	10.0	0.1	36.7	46.1

DIFF = Percent correct
Because of missing gender information, some totals may appear inconsistent.

M2_05 (MA33179): Algebra / Applying Type: CR 1 Point
 Label: Solve for 2 rational coefficients given 2 points

COUNTRY	N	10 %	70 %	71 %	79 %	OMITTED %	NOT REACHED %	V1 %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1328	25.9	13.5	1.0	34.0	25.7	0.0	25.9	20.0	31.3
Italy	1103	35.6	12.9	0.5	20.5	30.6	0.0	35.6	41.4	32.3
Lebanon	385	65.0	15.8	0.2	11.8	7.3	0.0	65.0	67.1	63.9
Norway	853	22.1	14.8	1.8	38.3	23.0	0.0	22.1	23.1	21.5
Portugal	1353	30.5	20.1	1.5	31.7	16.3	0.0	30.5	33.0	27.8
Russian Federation	2522	41.0	13.6	0.6	22.5	22.3	0.0	41.0	40.0	41.9
Russian Federation 6hr+	1151	58.5	12.1	0.3	13.6	15.5	0.0	58.5	55.1	61.4
Slovenia	981	33.6	28.3	0.4	30.0	7.6	0.0	33.6	35.3	31.2
Sweden	1321	18.2	11.8	1.7	47.7	20.5	0.1	18.2	15.2	20.3
United States	977	26.0	15.7	1.2	48.0	8.6	0.5	26.0	23.8	28.3
International Avg (n=9)	10823	33.1	16.3	1.0	31.6	18.0	0.1	33.1	33.2	33.2

V1 = Percent scoring 1 pt or better; V2 = Percent scoring 2 pts; Percent right for boys and girls corresponds to percent obtaining full credit.
 Because of missing gender information, some totals may appear inconsistent.

M2_06 (MA33076): Calculus / Knowing Type: MC Key: B
 Label: Use shaded graph regions to determine integral

COUNTRY	N	DIFF %	A %	B %	C %	D %	OMITTED %	NOT REACHED %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1328	52.5	1.0	52.5	7.1	37.6	1.9	0.0	47.9	56.7
Italy	1103	44.9	4.2	44.9	10.8	24.5	15.6	0.0	41.6	46.8
Lebanon	384	46.7	1.8	46.7	5.3	39.8	6.3	0.0	46.3	46.9
Norway	853	58.1	1.5	58.1	5.6	33.5	1.4	0.0	55.4	59.7
Portugal	1353	21.5	5.5	21.5	22.2	19.2	31.5	0.0	17.8	25.6
Russian Federation	2522	37.1	6.5	37.1	11.3	41.3	3.8	0.0	33.5	40.8
Russian Federation 6hr+	1151	47.9	2.2	47.9	7.7	39.3	2.9	0.0	46.4	49.1
Slovenia	981	41.4	2.0	41.4	11.5	38.7	6.5	0.0	39.5	44.0
Sweden	1321	63.3	2.8	63.3	8.6	23.4	1.7	0.1	62.2	64.1
United States	977	64.6	2.4	64.6	7.1	23.2	2.3	0.5	60.1	69.3
International Avg (n=9)	10822	47.8	3.1	47.8	9.9	31.3	7.9	0.1	44.9	50.4

DIFF = Percent correct
 Because of missing gender information, some totals may appear inconsistent.

M2_07 (MA33140): Calculus / Reasoning Type: MC Key: D
 Label: Find graph with first second derivative properties

COUNTRY	N	DIFF %	A %	B %	C %	D %	OMITTED %	NOT REACHED %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1328	41.3	6.6	13.6	31.0	41.3	7.4	0.1	32.9	49.0
Italy	1103	42.3	7.2	15.6	23.3	42.3	11.8	0.0	46.3	40.0
Lebanon	385	55.6	3.0	7.8	27.6	55.6	6.0	0.0	51.7	57.6
Norway	853	44.2	11.0	14.8	26.7	44.2	3.3	0.0	39.5	47.0
Portugal	1353	63.2	6.3	11.8	15.7	63.2	2.9	0.1	64.3	62.0
Russian Federation	2522	44.0	6.7	13.5	31.5	44.0	4.2	0.0	43.5	44.6
Russian Federation 6hr+	1151	57.6	3.7	8.9	27.3	57.6	2.5	0.0	55.7	59.2
Slovenia	.	.	.	.	.	.	.	.	.	.
Sweden	1320	41.7	9.3	14.4	30.9	41.7	3.7	0.1	41.3	42.0
United States	977	54.5	8.8	11.8	22.3	54.5	2.1	0.5	53.3	55.7
International Avg (n=8)	9841	48.3	7.4	12.9	26.1	48.3	5.1	0.1	46.6	49.7

DIFF = Percent correct
 Because of missing gender information, some totals may appear inconsistent.

M2_08 (MA33007): Calculus / Applying Type: MC Key: A
Label: Rational function limit of leading coefficients

COUNTRY	N	DIFF %	A %	B %	C %	D %	OMITTED %	NOT REACHED %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1328	46.0	46.0	7.9	21.1	21.5	3.4	0.1	44.9	46.9
Italy	1103	70.1	70.1	5.1	12.9	8.3	3.5	0.1	77.8	65.9
Lebanon	385	90.4	90.4	0.8	2.4	3.5	2.9	0.0	91.2	89.9
Norway	853	36.8	36.8	29.1	11.3	16.4	6.4	0.0	35.7	37.4
Portugal	1353	61.7	61.7	7.9	12.3	14.6	3.4	0.1	60.5	63.0
Russian Federation	2522	47.8	47.8	23.3	12.0	9.9	7.0	0.0	48.9	46.6
Russian Federation 6hr+	1151	57.5	57.5	17.2	10.0	11.6	3.6	0.0	56.2	58.6
Slovenia	981	49.6	49.6	18.4	15.6	10.9	5.6	0.0	48.4	51.2
Sweden	1320	26.6	26.6	23.4	20.9	24.7	4.3	0.2	25.3	27.5
United States	977	55.9	55.9	15.7	15.9	10.1	1.9	0.5	51.3	60.9
International Avg (n=9)	10822	53.9	53.9	14.6	13.8	13.3	4.3	0.1	53.8	54.4

DIFF = Percent correct
Because of missing gender information, some totals may appear inconsistent.

M2_09 (MA33214): Calculus / Reasoning Type: CR 1 Point
Label: Explain continuity at point of piecewise function

COUNTRY	N	10 %	79 %	OMITTED %	NOT REACHED %	V1 %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1328	21.3	47.0	31.6	0.1	21.3	16.2	26.0
Italy	1103	12.5	36.3	51.2	0.1	12.5	12.5	12.5
Lebanon	385	45.7	39.5	14.9	0.0	45.7	54.3	41.2
Norway	852	7.7	47.7	44.7	0.0	7.7	5.1	9.2
Portugal	1353	46.1	45.7	8.2	0.1	46.1	47.2	44.8
Russian Federation	2522	12.7	42.6	44.7	0.0	12.7	10.8	14.6
Russian Federation 6hr+	1151	26.9	45.8	27.3	0.0	26.9	23.9	29.3
Slovenia	981	21.4	55.9	22.8	0.0	21.4	17.3	27.1
Sweden	1321	8.8	50.6	40.5	0.2	8.8	8.5	8.9
United States	977	20.5	71.6	7.4	0.5	20.5	19.3	21.8
International Avg (n=9)	10822	21.8	48.5	29.5	0.1	21.8	21.2	22.9

V1 = Percent scoring 1 pt or better; V2 = Percent scoring 2 pts; Percent right for boys and girls corresponds to percent obtaining full credit.
Because of missing gender information, some totals may appear inconsistent.

M2_10 (MA33171): Geometry / Knowing Type: MC Key: C
 Label: Use trig identity to solve function translation

COUNTRY	N	DIFF %	A %	B %	C %	D %	OMITTED %	NOT REACHED %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1328	42.1	12.3	21.2	42.1	15.4	8.8	0.2	42.1	42.0
Italy	1103	41.4	10.1	17.2	41.4	21.2	9.7	0.4	41.2	41.6
Lebanon	385	62.6	6.8	2.7	62.6	24.7	3.1	0.0	67.3	60.2
Norway	853	32.2	16.6	27.4	32.2	15.7	8.1	0.0	33.2	31.6
Portugal	1353	62.0	6.7	9.0	62.0	20.5	1.7	0.1	62.3	61.8
Russian Federation	2522	65.0	7.2	7.9	65.0	16.9	3.0	0.0	64.5	65.5
Russian Federation 6hr+	1151	77.3	4.6	3.5	77.3	12.0	2.5	0.0	78.8	76.1
Slovenia	981	37.4	10.3	21.0	37.4	22.0	9.3	0.0	35.7	39.9
Sweden	1320	30.6	14.2	24.7	30.6	22.2	8.1	0.3	30.3	30.8
United States	977	33.2	20.6	24.1	33.2	18.8	2.8	0.5	30.3	36.2
International Avg (n=9)	10822	45.2	11.6	17.2	45.2	19.7	6.1	0.2	45.2	45.5

DIFF = Percent correct
 Because of missing gender information, some totals may appear inconsistent.

M2_11 (MA33039): Geometry / Applying Type: CR 1 Point
 Label: Solve for hexagon diagonal given side

COUNTRY	N	10 %	11 %	79 %	OMITTED %	NOT REACHED %	V1 %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1327	28.5	0.9	52.5	17.7	0.3	29.4	27.4	31.2
Italy	1103	32.9	8.8	33.0	25.0	0.4	41.7	43.8	40.5
Lebanon	385	42.9	15.3	29.5	12.3	0.0	58.2	48.9	62.9
Norway	853	37.7	8.2	39.6	14.5	0.0	45.9	44.5	46.7
Portugal	1353	50.2	0.1	42.9	6.8	0.1	50.3	50.1	50.4
Russian Federation	2522	27.1	33.4	26.0	13.5	0.0	60.5	61.4	59.6
Russian Federation 6hr+	1151	41.1	36.9	16.5	5.4	0.0	78.0	79.5	76.8
Slovenia	980	49.8	3.9	43.8	2.6	0.0	53.7	52.5	55.3
Sweden	1321	48.4	0.2	41.2	9.8	0.4	48.6	51.3	46.7
United States	977	22.4	13.4	59.1	4.6	0.5	35.7	32.0	39.7
International Avg (n=9)	10821	37.8	9.3	40.8	11.9	0.2	47.1	45.8	48.1

V1 = Percent scoring 1 pt or better; V2 = Percent scoring 2 pts; Percent right for boys and girls corresponds to percent obtaining full credit.
 Because of missing gender information, some totals may appear inconsistent.

M2_12 (MA33180): Geometry / Reasoning Type: CR 1 Point
Label: Find side given overlapping triangle side ratios

COUNTRY	N	10 %	70 %	79 %	OMITTED %	NOT REACHED %	V1 %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1328	15.8	1.1	38.0	44.6	0.5	15.8	13.4	18.0
Italy	1101	22.2	4.1	37.6	35.5	0.6	22.2	20.3	23.3
Lebanon	385	34.8	1.8	35.4	27.4	0.5	34.8	36.1	34.2
Norway	853	37.2	7.1	38.9	16.6	0.1	37.2	40.7	35.1
Portugal	1353	23.7	2.9	55.5	17.7	0.2	23.7	21.4	26.3
Russian Federation	2522	55.4	4.0	29.2	11.3	0.1	55.4	54.7	56.1
Russian Federation 6hr+	1151	69.3	3.8	20.5	6.0	0.4	69.3	68.1	70.2
Slovenia	981	25.1	3.3	62.0	9.6	0.0	25.1	23.2	27.8
Sweden	1322	33.6	2.8	44.7	18.2	0.7	33.6	34.6	32.9
United States	977	31.4	5.8	58.4	3.8	0.5	31.4	28.7	34.3
International Avg (n=9)	10822	31.0	3.6	44.4	20.5	0.4	31.0	30.4	32.0

V1 = Percent scoring 1 pt or better; V2 = Percent scoring 2 pts; Percent right for boys and girls corresponds to percent obtaining full credit.
Because of missing gender information, some totals may appear inconsistent.

M3_01 (MA23005): Algebra / Knowing Type: MC Key: B
 Label: Which term has a value of 243

COUNTRY	N	DIFF %	A %	B %	C %	D %	OMITTED %	NOT REACHED %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1319	34.2	31.1	34.2	5.4	26.5	2.6	0.1	28.8	39.1
Italy	1118	35.6	13.3	35.6	10.5	26.7	13.7	0.1	26.5	41.0
Lebanon	382	46.5	24.5	46.5	4.2	19.1	5.8	0.0	47.2	46.2
Norway	839	58.8	14.9	58.8	7.0	16.0	3.3	0.0	55.0	60.9
Portugal	1355	45.5	10.1	45.5	12.2	23.5	8.6	0.1	42.0	49.0
Russian Federation	2504	70.5	11.1	70.5	4.5	13.1	0.8	0.1	65.9	75.1
Russian Federation 6hr+	1134	79.5	8.9	79.5	3.1	8.0	0.6	0.0	75.9	83.0
Slovenia	984	56.9	10.6	56.9	8.3	19.3	4.9	0.0	50.3	67.3
Sweden	1318	44.5	14.2	44.5	11.5	23.9	5.7	0.0	35.2	50.3
United States	989	60.5	13.9	60.5	8.2	11.9	5.5	0.0	51.2	69.2
International Avg (n=9)	10808	50.4	16.0	50.4	8.0	20.0	5.7	0.0	44.7	55.3

DIFF = Percent correct
 Because of missing gender information, some totals may appear inconsistent.

M3_02 (MA23145): Algebra / Knowing Type: CR 1 Point
Label: How many 3 digit numbers formed

COUNTRY	N	10 %	70 %	79 %	OMITTED %	NOT REACHED %	V1 %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1319	15.3	15.2	63.4	6.0	0.1	15.3	13.7	16.7
Italy	1116	17.5	3.3	57.7	21.4	0.1	17.5	15.3	18.7
Lebanon	383	44.0	4.1	40.1	11.8	0.0	44.0	45.8	42.9
Norway	839	41.6	6.1	40.3	12.0	0.0	41.6	41.9	41.5
Portugal	1355	66.7	1.2	27.8	4.1	0.1	66.7	67.3	66.1
Russian Federation	2504	35.9	6.2	45.5	12.4	0.1	35.9	36.0	35.8
Russian Federation 6hr+	1134	47.8	5.4	38.4	8.4	0.0	47.8	45.8	49.8
Slovenia	984	53.7	2.2	38.1	6.0	0.0	53.7	50.5	58.5
Sweden	1318	32.2	6.1	54.9	6.8	0.0	32.2	27.4	35.1
United States	989	32.7	6.6	56.6	4.1	0.0	32.7	31.8	33.6
International Avg (n=9)	10807	37.7	5.7	47.2	9.4	0.1	37.7	36.6	38.8

V1 = Percent scoring 1 pt or better; V2 = Percent scoring 2 pts; Percent right for boys and girls corresponds to percent obtaining full credit.
Because of missing gender information, some totals may appear inconsistent.

M3_03 (MA23187): Algebra / Applying Type: CR 2 Points
Label: New diameter of soup can

COUNTRY	N	20 %	21 %	10 %	11 %	12 %	70 %	79 %	OMITTED %	NOT REACHED %	V1 %	V2 %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1319	32.5	0.0	9.9	1.7	0.1	0.5	41.7	13.6	0.1	44.1	32.5	29.0	35.6
Italy	1117	31.6	0.0	3.3	6.0	0.0	0.1	35.2	23.6	0.1	41.0	31.6	30.3	32.4
Lebanon	383	36.5	0.0	10.7	2.1	0.0	0.0	32.0	18.7	0.0	49.3	36.5	31.3	39.5
Norway	839	50.9	0.3	8.9	14.5	0.0	0.0	17.0	8.3	0.1	74.6	51.2	58.3	47.2
Portugal	1355	43.2	0.1	5.2	8.6	0.0	0.1	34.7	8.0	0.1	57.1	43.3	41.5	45.2
Russian Federation	2504	38.6	0.7	11.1	1.2	0.3	0.2	30.7	17.2	0.1	51.9	39.3	40.7	37.9
Russian Federation 6hr+	1134	54.4	0.6	12.3	0.4	0.1	0.1	20.0	12.1	0.0	67.8	55.0	52.8	57.2
Slovenia	983	32.2	0.0	16.4	17.4	0.2	0.0	26.9	7.0	0.0	66.1	32.2	28.9	37.4
Sweden	1318	57.4	0.1	8.3	0.7	0.0	0.0	25.1	8.3	0.1	66.5	57.5	63.0	54.1
United States	989	40.3	1.1	12.4	5.8	0.3	0.1	35.8	4.2	0.0	59.9	41.3	40.7	41.9
International Avg (n=9)	10807	40.4	0.2	9.6	6.5	0.1	0.1	31.0	12.1	0.1	56.7	40.6	40.4	41.3

V1 = Percent scoring 1 pt or better; V2 = Percent scoring 2 pts; Percent right for boys and girls corresponds to percent obtaining full credit.
Because of missing gender information, some totals may appear inconsistent.

M3_04 (MA23201): Algebra / Reasoning Type: CR 1 Point
 Label: What is the error Carl made

COUNTRY	N	10 %	11 %	79 %	OMITTED %	NOT REACHED %	V1 %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1319	61.7	0.8	31.2	6.2	0.1	62.5	61.0	63.8
Italy	1118	29.5	1.0	49.9	19.4	0.1	30.6	28.2	32.0
Lebanon	383	66.6	2.0	27.4	4.1	0.0	68.6	68.5	68.6
Norway	839	41.2	1.7	41.5	15.4	0.1	42.9	46.5	40.9
Portugal	1355	54.5	0.3	39.1	5.9	0.1	54.8	56.6	53.0
Russian Federation	2504	45.9	3.4	37.3	13.4	0.1	49.3	48.2	50.3
Russian Federation 6hr+	1134	60.1	1.9	31.8	6.2	0.0	62.0	57.7	66.3
Slovenia	983	43.4	1.4	44.5	10.6	0.0	44.9	40.5	51.6
Sweden	1317	36.7	0.9	39.6	22.6	0.1	37.7	37.1	38.0
United States	989	37.2	1.0	55.1	6.7	0.0	38.2	33.6	42.5
International Avg (n=9)	10807	46.3	1.4	40.6	11.6	0.1	47.7	46.7	49.0

V1 = Percent scoring 1 pt or better; V2 = Percent scoring 2 pts; Percent right for boys and girls corresponds to percent obtaining full credit.
 Because of missing gender information, some totals may appear inconsistent.

M3_05 (MA23154): Calculus / Knowing Type: CR 2 Points
 Label: Second derivative of function given

COUNTRY	N	20 %	10 %	79 %	OMITTED %	NOT REACHED %	V1 %	V2 %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1319	32.6	11.8	51.4	3.9	0.3	44.3	32.6	28.9	35.8
Italy	1118	33.0	12.1	41.5	13.1	0.2	45.2	33.0	33.9	32.5
Lebanon	383	68.8	22.6	7.7	0.9	0.0	91.4	68.8	65.0	71.0
Norway	839	41.8	12.5	41.3	3.8	0.6	54.4	41.8	40.3	42.7
Portugal	1355	38.9	20.0	36.3	4.6	0.2	58.9	38.9	41.4	36.3
Russian Federation	2504	43.4	4.1	32.0	20.3	0.1	47.6	43.4	42.9	44.0
Russian Federation 6hr+	1134	59.1	4.3	26.2	10.3	0.0	63.4	59.1	57.2	60.9
Slovenia	984	34.3	13.1	46.0	6.6	0.0	47.4	34.3	32.8	36.6
Sweden	1318	42.6	12.6	38.1	6.7	0.1	55.2	42.6	41.9	43.0
United States	989	52.1	11.3	33.9	2.7	0.0	63.4	52.1	52.2	52.0
International Avg (n=9)	10809	43.1	13.3	36.5	7.0	0.2	56.4	43.1	42.1	43.8

V1 = Percent scoring 1 pt or better; V2 = Percent scoring 2 pts; Percent right for boys and girls corresponds to percent obtaining full credit.
 Because of missing gender information, some totals may appear inconsistent.

M3_06 (MA23206): Calculus / Reasoning Type: MC Key: D
 Label: Sign of derivative function

COUNTRY	N	DIFF %	A %	B %	C %	D %	OMITTED %	NOT REACHED %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1319	67.2	27.2	1.3	2.6	67.2	1.4	0.3	62.6	71.2
Italy	1118	37.5	42.9	3.0	8.3	37.5	8.1	0.2	36.1	38.3
Lebanon	383	80.0	14.9	2.1	1.6	80.0	1.4	0.0	80.5	79.7
Norway	839	73.3	14.7	3.9	5.9	73.3	1.5	0.6	72.7	73.7
Portugal	1355	69.9	19.7	1.0	7.7	69.9	1.5	0.2	70.0	69.7
Russian Federation	2504	68.8	21.1	1.8	6.8	68.8	1.4	0.1	68.7	69.0
Russian Federation 6hr+	1134	78.6	14.7	0.9	4.2	78.6	1.5	0.0	76.7	80.6
Slovenia	984	42.9	36.9	4.6	12.0	42.9	3.6	0.0	38.3	50.0
Sweden	1317	71.2	12.4	5.5	8.5	71.2	2.4	0.1	68.3	73.0
United States	989	65.0	17.2	5.6	7.2	65.0	5.1	0.0	60.5	69.2
International Avg (n=9)	10808	64.0	23.0	3.2	6.7	64.0	2.9	0.2	62.0	66.0

DIFF = Percent correct
 Because of missing gender information, some totals may appear inconsistent.

M3_07 (MA23166): Calculus / Applying Type: CR 1 Point
Label: Units of commodity to max profit

COUNTRY	N	10 %	11 %	70 %	71 %	72 %	79 %	OMITTED %	NOT REACHED %	V1 %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1319	7.5	2.2	0.7	0.4	4.1	52.3	32.6	0.3	9.6	4.7	14.1
Italy	1115	3.0	0.1	0.5	0.0	0.0	31.7	64.2	0.5	3.1	1.0	4.3
Lebanon	383	9.1	0.0	0.3	0.0	0.0	49.3	41.3	0.0	9.1	10.5	8.3
Norway	839	10.4	1.3	1.7	0.1	3.1	44.8	37.9	0.6	11.7	6.8	14.5
Portugal	1355	4.6	1.6	0.9	0.2	1.4	61.1	30.1	0.2	6.2	4.9	7.5
Russian Federation	2504	12.3	0.0	0.4	0.1	0.0	34.1	53.0	0.1	12.3	10.1	14.5
Russian Federation 6hr+	1134	17.4	0.1	0.8	0.1	0.1	40.3	41.2	0.0	17.5	12.5	22.4
Slovenia	983	4.6	0.1	0.4	0.0	0.0	67.6	27.2	0.1	4.7	2.4	8.2
Sweden	1317	10.5	1.8	0.7	0.1	2.2	58.5	26.2	0.2	12.3	10.2	13.6
United States	989	11.5	4.3	6.7	0.1	8.9	55.3	13.2	0.0	15.8	10.1	21.0
International Avg (n=9)	10804	8.2	1.3	1.4	0.1	2.2	50.5	36.2	0.2	9.4	6.7	11.8

V1 = Percent scoring 1 pt or better; V2 = Percent scoring 2 pts; Percent right for boys and girls corresponds to percent obtaining full credit.
Because of missing gender information, some totals may appear inconsistent.

M3_08 (MA23043): Calculus / Applying Type: CR 2 Points
 Label: Area enclosed by graphs of functions

COUNTRY	N	20 %	21 %	10 %	11 %	12 %	70 %	79 %	OMITTED %	NOT REACHED %	V1 %	V2 %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1319	5.2	1.5	2.5	0.3	1.3	2.3	40.0	46.5	0.4	10.8	6.7	5.5	7.7
Italy	1118	6.2	0.1	7.5	0.0	0.6	0.0	31.9	53.2	0.5	14.4	6.3	6.2	6.3
Lebanon	383	19.6	0.8	15.5	0.0	0.6	0.0	43.4	20.0	0.0	36.6	20.5	18.3	21.7
Norway	839	16.1	3.7	9.9	0.0	1.1	2.2	28.7	37.5	0.8	30.8	19.8	24.4	17.3
Portugal	1355	0.1	0.5	0.0	0.0	0.0	0.2	47.8	51.0	0.5	0.6	0.6	0.5	0.7
Russian Federation	2504	15.7	0.1	4.7	0.0	0.4	0.0	34.0	44.7	0.2	21.0	15.9	15.3	16.5
Russian Federation 6hr+	1134	21.9	0.1	7.8	0.1	0.7	0.1	37.7	31.7	0.1	30.4	21.9	18.7	25.1
Slovenia	984	15.2	0.1	15.4	0.1	1.6	0.1	54.7	12.8	0.1	32.3	15.3	14.7	16.2
Sweden	1318	16.4	6.2	6.1	0.4	0.5	2.5	36.2	31.2	0.4	29.7	22.6	22.1	23.0
United States	989	23.6	13.8	13.0	1.6	0.8	1.4	35.0	10.9	0.0	52.7	37.3	35.7	38.8
International Avg (n=9)	10809	13.1	3.0	8.3	0.3	0.8	1.0	39.1	34.2	0.3	25.4	16.1	15.8	16.5

V1 = Percent scoring 1 pt or better; V2 = Percent scoring 2 pts; Percent right for boys and girls corresponds to percent obtaining full credit.
 Because of missing gender information, some totals may appear inconsistent.

M3_09 (MA23076): Geometry / Applying Type: MC Key: C
 Label: How long is distance between B and Q

COUNTRY	N	DIFF %	A %	B %	C %	D %	OMITTED %	NOT REACHED %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1319	48.5	13.2	21.2	48.5	9.9	6.6	0.7	42.8	53.7
Italy	1118	46.2	14.0	20.8	46.2	7.9	10.7	0.5	42.9	48.3
Lebanon	382	53.8	11.9	15.5	53.8	4.4	14.4	0.0	53.5	54.0
Norway	839	54.1	10.0	20.1	54.1	8.8	6.3	0.8	53.1	54.6
Portugal	1355	68.9	8.5	11.9	68.9	5.1	5.0	0.6	63.2	74.7
Russian Federation	2504	59.5	10.5	22.6	59.5	5.0	2.2	0.2	59.4	59.6
Russian Federation 6hr+	1134	69.1	5.4	17.9	69.1	5.4	2.2	0.1	67.0	71.1
Slovenia	984	58.4	10.8	16.6	58.4	9.5	4.6	0.1	52.9	66.9
Sweden	1318	49.2	12.6	23.9	49.2	8.1	5.3	0.8	43.1	53.0
United States	989	45.2	16.0	26.2	45.2	5.8	6.8	0.0	39.0	51.0
International Avg (n=9)	10808	53.8	11.9	19.8	53.8	7.2	6.9	0.4	50.0	57.3

DIFF = Percent correct
 Because of missing gender information, some totals may appear inconsistent.

M3_10 (MA23176): Geometry / Applying Type: MC Key: B
 Label: What is the height of the lighthouse

COUNTRY	N	DIFF %	A %	B %	C %	D %	OMITTED %	NOT REACHED %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1319	51.7	5.6	51.7	24.6	7.6	9.7	0.8	51.2	52.1
Italy	1118	50.4	9.9	50.4	20.8	8.1	10.3	0.5	49.5	50.9
Lebanon	383	61.5	2.3	61.5	18.5	6.3	11.4	0.0	54.7	65.4
Norway	839	63.1	4.5	63.1	19.4	5.1	7.2	0.8	63.0	63.2
Portugal	1355	64.5	5.0	64.5	16.1	7.7	6.1	0.6	64.7	64.3
Russian Federation	2503	53.1	11.0	53.1	17.5	10.4	7.7	0.2	51.6	54.6
Russian Federation 6hr+	1133	62.0	9.5	62.0	13.9	6.6	7.9	0.1	60.6	63.4
Slovenia	984	58.7	3.9	58.7	21.5	5.3	10.5	0.2	55.0	64.3
Sweden	1318	65.3	5.0	65.3	17.6	5.2	5.4	1.4	65.8	65.1
United States	989	57.5	4.9	57.5	19.9	8.0	9.5	0.1	53.7	61.0
International Avg (n=9)	10808	58.4	5.8	58.4	19.5	7.1	8.6	0.5	56.6	60.1

DIFF = Percent correct
 Because of missing gender information, some totals may appear inconsistent.

M3_11 (MA23098): Geometry / Knowing Type: MC Key: C
 Label: Which is equivalent to equation

COUNTRY	N	DIFF %	A %	B %	C %	D %	OMITTED %	NOT REACHED %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1319	34.4	13.6	27.6	34.4	15.2	8.0	1.1	31.8	36.8
Italy	1118	33.8	13.6	30.3	33.8	9.3	12.5	0.5	36.8	32.1
Lebanon	382	31.6	13.3	28.1	31.6	13.3	13.7	0.0	28.8	33.2
Norway	839	40.2	9.9	30.9	40.2	13.3	5.0	0.8	34.0	43.6
Portugal	1355	39.4	10.7	28.5	39.4	12.7	7.5	1.2	37.7	41.1
Russian Federation	2504	45.4	11.0	27.1	45.4	11.2	5.1	0.3	45.0	45.8
Russian Federation 6hr+	1134	56.5	8.8	20.9	56.5	8.7	4.8	0.3	53.1	59.8
Slovenia	984	42.7	10.1	27.4	42.7	13.5	5.9	0.4	40.5	46.1
Sweden	1318	40.9	10.9	30.4	40.9	9.7	6.0	2.0	41.9	40.3
United States	989	38.6	9.4	36.0	38.6	9.2	6.3	0.6	39.1	38.1
International Avg (n=9)	10808	38.6	11.4	29.6	38.6	11.9	7.8	0.8	37.3	39.7

DIFF = Percent correct
 Because of missing gender information, some totals may appear inconsistent.

M4_01 (MA33008): Algebra / Knowing Type: CR 1 Point
 Label: Simplify log exponent using inverses

COUNTRY	N	10 %	79 %	OMITTED %	NOT REACHED %	V1 %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1322	78.0	12.5	8.7	0.8	78.0	73.8	81.8
Italy	1114	26.3	22.2	51.1	0.4	26.3	28.2	25.2
Lebanon	383	20.1	50.6	28.6	0.7	20.1	14.1	23.8
Norway	838	10.8	64.4	24.2	0.6	10.8	9.3	11.6
Portugal	1370	57.4	23.1	19.0	0.4	57.4	57.5	57.4
Russian Federation	2516	76.3	11.0	12.5	0.2	76.3	75.4	77.2
Russian Federation 6hr+	1149	84.2	8.5	6.8	0.4	84.2	84.3	84.2
Slovenia	979	25.5	46.1	28.4	0.0	25.5	21.8	30.7
Sweden	1325	18.4	50.6	29.5	1.5	18.4	12.7	22.2
United States	982	34.3	47.3	17.9	0.5	34.3	33.0	35.5
International Avg (n=9)	10829	38.6	36.4	24.4	0.6	38.6	36.2	40.6

V1 = Percent scoring 1 pt or better; V2 = Percent scoring 2 pts; Percent right for boys and girls corresponds to percent obtaining full credit.
 Because of missing gender information, some totals may appear inconsistent.

M4_02 (MA33121): Algebra / Applying Type: CR 2 Points
 Label: Find x values of two functions' intersections

COUNTRY	N	20 %	10 %	11 %	79 %	OMITTED %	NOT REACHED %	V1 %	V2 %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1322	8.3	10.7	11.3	28.7	40.1	0.8	30.4	8.3	7.0	9.6
Italy	1114	29.1	7.9	4.7	15.5	42.3	0.4	41.8	29.1	37.2	24.5
Lebanon	383	39.1	9.2	22.0	18.8	9.6	1.3	70.3	39.1	45.8	35.0
Norway	837	10.5	15.2	10.7	26.0	36.8	0.7	36.4	10.5	9.7	10.9
Portugal	1370	12.7	12.1	15.0	28.2	31.6	0.5	39.8	12.7	13.9	11.6
Russian Federation	2516	35.1	13.2	3.4	15.3	32.9	0.2	51.6	35.1	31.4	38.6
Russian Federation 6hr+	1149	49.5	10.9	3.8	14.5	20.8	0.4	64.2	49.5	44.4	54.1
Slovenia	980	25.6	8.9	17.4	36.7	11.4	0.1	51.8	25.6	27.3	23.3
Sweden	1325	8.6	10.0	10.2	34.3	34.4	2.5	28.7	8.6	8.1	8.8
United States	982	7.2	21.8	15.9	41.9	12.6	0.6	44.9	7.2	6.8	7.7
International Avg (n=9)	10829	19.6	12.1	12.3	27.3	28.0	0.8	44.0	19.6	20.8	18.9

V1 = Percent scoring 1 pt or better; V2 = Percent scoring 2 pts; Percent right for boys and girls corresponds to percent obtaining full credit.
 Because of missing gender information, some totals may appear inconsistent.

M4_03 (MA33240): Algebra / Applying Type: CR 2 Points
 Label: Compare car rental plans X and Y

COUNTRY	N	20 %	10 %	11 %	79 %	OMITTED %	NOT REACHED %	V1 %	V2 %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1322	51.8	9.1	6.1	17.0	14.9	1.1	67.0	51.8	45.0	58.1
Italy	1114	17.6	3.8	7.1	22.7	48.2	0.5	28.5	17.6	12.4	20.6
Lebanon	383	21.3	2.0	13.1	17.5	44.7	1.3	36.5	21.3	21.5	21.3
Norway	838	38.8	22.2	3.4	18.6	16.2	0.9	64.4	38.8	40.0	38.2
Portugal	1370	28.6	11.8	4.1	24.0	30.9	0.6	44.5	28.6	20.6	36.6
Russian Federation	2516	29.6	9.6	6.3	22.2	31.4	0.9	45.5	29.6	23.2	35.8
Russian Federation 6hr+	1149	43.5	9.0	4.4	21.0	21.5	0.6	56.9	43.5	32.2	53.5
Slovenia	980	27.9	7.7	11.2	33.4	19.8	0.1	46.8	27.9	21.5	36.7
Sweden	1324	16.3	37.9	1.0	29.1	13.1	2.5	55.2	16.3	14.6	17.4
United States	982	35.1	21.8	5.1	30.9	6.5	0.6	62.0	35.1	37.6	32.8
International Avg (n=9)	10829	29.7	14.0	6.4	23.9	25.1	0.9	50.1	29.7	26.3	33.1

V1 = Percent scoring 1 pt or better; V2 = Percent scoring 2 pts; Percent right for boys and girls corresponds to percent obtaining full credit.
 Because of missing gender information, some totals may appear inconsistent.

M4_04 (MA33050): Algebra / Reasoning Type: MC Key: D
Label: Find a and b for equation given asymptotes

COUNTRY	N	DIFF %	A %	B %	C %	D %	OMITTED %	NOT REACHED %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1322	33.7	20.4	17.9	13.6	33.7	13.1	1.3	31.4	35.9
Italy	1114	27.0	16.9	20.3	17.1	27.0	18.1	0.5	31.7	24.3
Lebanon	383	55.5	15.5	6.3	9.4	55.5	11.8	1.5	59.6	53.1
Norway	838	31.4	20.2	26.5	11.5	31.4	9.3	1.1	29.6	32.4
Portugal	1370	53.0	15.2	11.7	13.0	53.0	6.2	0.9	50.3	55.7
Russian Federation	2516	28.8	18.7	23.0	20.6	28.8	7.8	1.1	28.3	29.3
Russian Federation 6hr+	1149	39.0	15.5	21.1	17.3	39.0	6.5	0.6	38.5	39.4
Slovenia	980	36.5	17.2	19.4	16.7	36.5	10.1	0.1	35.5	38.1
Sweden	1325	28.6	12.7	29.7	18.1	28.6	8.1	2.7	27.0	29.7
United States	982	44.9	11.9	25.5	12.0	44.9	5.0	0.6	43.4	46.3
International Avg (n=9)	10830	37.7	16.5	20.0	14.7	37.7	9.9	1.1	37.4	38.3

DIFF = Percent correct
Because of missing gender information, some totals may appear inconsistent.

M4_05 (MA33046): Calculus / Knowing Type: MC Key: C
Label: Find exponential function limit

COUNTRY	N	DIFF %	A %	B %	C %	D %	OMITTED %	NOT REACHED %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1322	69.9	5.3	15.9	69.9	4.5	2.6	1.8	65.0	74.4
Italy	1114	72.2	6.4	12.1	72.2	3.3	5.3	0.7	75.7	70.3
Lebanon	383	92.4	0.1	3.1	92.4	0.9	1.9	1.5	91.7	92.8
Norway	838	65.7	11.0	9.5	65.7	6.0	6.3	1.4	62.7	67.3
Portugal	1370	78.9	5.3	8.6	78.9	3.4	2.1	1.6	79.8	78.0
Russian Federation	2516	66.2	9.0	10.7	66.2	7.1	5.8	1.2	65.8	66.6
Russian Federation 6hr+	1149	70.4	7.0	11.1	70.4	4.6	6.0	0.9	66.4	74.0
Slovenia	980	56.5	9.3	15.6	56.5	6.1	12.3	0.2	50.5	64.8
Sweden	1325	58.1	16.1	11.8	58.1	6.0	4.3	3.7	55.7	59.6
United States	982	59.0	6.4	22.7	59.0	3.4	7.8	0.7	53.5	64.0
International Avg (n=9)	10830	68.8	7.7	12.2	68.8	4.5	5.4	1.4	66.7	70.9

DIFF = Percent correct
Because of missing gender information, some totals may appear inconsistent.

M4_06 (MA33162): Calculus / Knowing Type: MC Key: B
 Label: Derivative of sin^2 where argument is function

COUNTRY	N	DIFF %	A %	B %	C %	D %	OMITTED %	NOT REACHED %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1322	25.7	21.0	25.7	20.8	21.5	9.1	2.0	24.9	26.4
Italy	1114	49.8	15.9	49.8	13.9	10.6	9.1	0.7	57.2	45.6
Lebanon	383	56.1	13.6	56.1	13.0	10.1	5.8	1.5	55.7	56.3
Norway	838	38.7	18.3	38.7	19.2	16.2	5.6	2.0	42.4	36.7
Portugal	1370	36.0	16.7	36.0	25.8	11.8	7.8	1.9	36.7	35.3
Russian Federation	2516	57.5	14.8	57.5	15.4	7.7	3.4	1.2	56.9	58.2
Russian Federation 6hr+	1149	65.8	13.8	65.8	10.1	5.4	4.0	0.9	69.2	62.9
Slovenia	980	47.3	22.5	47.3	12.9	11.8	5.3	0.2	47.7	46.7
Sweden	1325	39.8	21.4	39.8	14.3	14.6	6.0	3.8	37.9	41.0
United States	982	58.3	10.9	58.3	12.2	12.0	5.9	0.7	56.5	59.9
International Avg (n=9)	10830	45.5	17.3	45.5	16.4	12.9	6.4	1.6	46.2	45.1

DIFF = Percent correct
 Because of missing gender information, some totals may appear inconsistent.

M4_07 (MA33163): Calculus / Reasoning Type: MC Key: D
Label: Discern function graph from derivative graph

COUNTRY	N	DIFF %	A %	B %	C %	D %	OMITTED %	NOT REACHED %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1322	49.8	9.3	22.6	13.1	49.8	2.8	2.5	44.1	55.0
Italy	1114	31.8	10.0	28.1	17.4	31.8	11.4	1.3	30.7	32.4
Lebanon	383	59.7	6.5	14.8	11.2	59.7	4.9	2.9	60.8	59.0
Norway	838	53.1	10.5	20.9	8.8	53.1	4.5	2.2	53.6	52.8
Portugal	1370	54.0	7.3	23.3	10.6	54.0	2.4	2.5	54.6	53.4
Russian Federation	2516	57.5	7.8	17.1	14.0	57.5	2.3	1.4	56.9	58.1
Russian Federation 6hr+	1149	68.7	6.7	12.7	7.6	68.7	3.2	1.0	70.5	67.1
Slovenia	980	33.5	13.0	31.1	17.2	33.5	5.0	0.3	29.7	38.8
Sweden	1325	48.9	11.0	22.3	10.9	48.9	2.5	4.3	46.1	50.8
United States	982	58.0	9.1	21.2	7.1	58.0	3.7	0.9	54.8	61.1
International Avg (n=9)	10830	49.6	9.4	22.4	12.2	49.6	4.4	2.0	47.9	51.3

DIFF = Percent correct
Because of missing gender information, some totals may appear inconsistent.

M4_08 (MA33066): Calculus / Reasoning Type: MC Key: D
 Label: Find range of integral with variable upper bound

COUNTRY	N	DIFF %	A %	B %	C %	D %	OMITTED %	NOT REACHED %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1322	37.8	4.8	18.8	29.1	37.8	6.7	2.7	37.9	37.7
Italy	1114	30.3	6.1	17.7	24.5	30.3	19.7	1.7	29.1	30.9
Lebanon	383	64.9	6.4	9.3	9.3	64.9	5.9	4.2	72.4	60.3
Norway	838	47.0	5.6	14.3	21.9	47.0	7.4	3.9	42.5	49.5
Portugal	1370	10.6	11.1	19.6	24.5	10.6	31.2	3.1	8.8	12.4
Russian Federation	2516	40.5	6.2	20.9	25.1	40.5	5.8	1.5	40.5	40.5
Russian Federation 6hr+	1149	50.8	7.4	14.0	21.5	50.8	4.9	1.4	49.4	51.9
Slovenia	980	39.2	7.5	18.6	25.4	39.2	8.8	0.5	40.4	37.5
Sweden	1325	38.1	8.1	18.7	24.2	38.1	6.4	4.5	37.5	38.5
United States	982	51.2	4.9	13.9	22.5	51.2	6.6	0.9	53.1	49.5
International Avg (n=9)	10830	40.0	6.7	16.9	22.9	40.0	10.9	2.6	40.3	39.7

DIFF = Percent correct
 Because of missing gender information, some totals may appear inconsistent.

M4_09 (MA33182): Geometry / Applying Type: MC Key: A
Label: Value of compound special triangles ratio

COUNTRY	N	DIFF %	A %	B %	C %	D %	OMITTED %	NOT REACHED %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1322	29.1	29.1	18.5	19.6	12.4	16.2	4.1	24.0	33.9
Italy	1114	42.0	42.0	18.5	14.0	11.7	10.0	3.8	43.9	41.0
Lebanon	383	61.7	61.7	11.5	8.1	4.4	9.3	5.0	68.1	57.9
Norway	838	35.3	35.3	12.6	20.7	16.9	9.7	4.7	31.8	37.2
Portugal	1370	33.3	33.3	24.0	17.0	9.7	10.4	5.5	31.1	35.6
Russian Federation	2516	58.7	58.7	16.5	10.6	10.3	2.0	1.9	56.7	60.7
Russian Federation 6hr+	1149	69.0	69.0	12.2	8.9	5.8	2.3	1.8	67.6	70.3
Slovenia	980	37.6	37.6	20.6	18.3	12.7	8.9	1.7	37.6	37.7
Sweden	1325	34.2	34.2	13.9	21.3	18.6	6.6	5.4	31.0	36.3
United States	982	43.3	43.3	13.6	20.0	11.9	10.1	1.0	39.9	46.5
International Avg (n=9)	10830	41.7	41.7	16.6	16.6	12.1	9.2	3.7	40.5	43.0

DIFF = Percent correct
Because of missing gender information, some totals may appear inconsistent.

M4_10 (MA33232): Geometry / Reasoning Type: CR 2 Points
Label: Find maximum animals given periodic function

COUNTRY	N	20 %	10 %	11 %	79 %	OMITTED %	NOT REACHED %	V1 %	V2 %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1322	13.2	22.0	0.4	25.1	34.2	5.1	35.6	13.2	7.4	18.6
Italy	1114	17.1	4.5	1.9	16.3	54.7	5.5	23.5	17.1	13.8	19.0
Lebanon	383	44.9	8.7	3.6	16.7	20.5	5.5	57.2	44.9	41.8	46.7
Norway	838	27.9	20.6	2.1	22.9	20.9	5.6	50.5	27.9	21.8	31.2
Portugal	1370	29.6	12.1	2.7	25.6	23.9	6.1	44.3	29.6	26.5	32.7
Russian Federation	2516	32.3	11.0	1.9	13.7	39.1	2.1	45.2	32.3	29.0	35.4
Russian Federation 6hr+	1149	52.2	8.2	1.5	10.6	25.3	2.2	61.9	52.2	47.6	56.3
Slovenia	980	20.0	9.3	2.0	28.4	37.8	2.5	31.3	20.0	13.9	28.4
Sweden	1325	18.2	32.1	0.5	25.7	17.3	6.2	50.8	18.2	11.2	22.7
United States	982	35.8	9.6	5.9	32.5	14.8	1.5	51.3	35.8	28.4	42.6
International Avg (n=9)	10830	26.5	14.4	2.3	23.0	29.2	4.5	43.3	26.5	21.5	30.8

V1 = Percent scoring 1 pt or better; V2 = Percent scoring 2 pts; Percent right for boys and girls corresponds to percent obtaining full credit.
Because of missing gender information, some totals may appear inconsistent.

M4_11 (MA33178): Geometry / Reasoning Type: CR 1 Point
Label: Prove vertices of ABCD make a parallelogram

COUNTRY	N	10 %	11 %	79 %	OMITTED %	NOT REACHED %	V1 %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1321	24.2	21.7	33.1	9.6	11.4	45.8	44.7	46.9
Italy	1113	26.2	0.1	23.1	26.9	23.7	26.3	29.8	24.3
Lebanon	383	18.8	49.2	20.6	3.1	8.3	68.0	75.9	63.1
Norway	838	5.1	48.5	18.4	14.8	13.1	53.7	53.2	53.9
Portugal	1370	23.9	4.1	33.1	23.3	15.6	28.0	25.6	30.4
Russian Federation	2516	28.6	7.1	25.6	21.9	16.8	35.7	35.0	36.5
Russian Federation 6hr+	1149	38.9	12.3	22.9	15.0	10.9	51.2	53.1	49.4
Slovenia	979	21.5	1.3	46.4	18.1	12.7	22.8	21.2	25.1
Sweden	1325	17.6	0.4	33.4	32.5	16.1	18.0	18.2	17.9
United States	982	41.0	1.1	47.2	7.8	3.0	42.1	39.5	44.4
International Avg (n=9)	10827	23.0	14.8	31.2	17.6	13.4	37.8	38.1	38.1

V1 = Percent scoring 1 pt or better; V2 = Percent scoring 2 pts; Percent right for boys and girls corresponds to percent obtaining full credit.
Because of missing gender information, some totals may appear inconsistent.

M5_01 (MA23144): Algebra / Knowing Type: MC Key: C
 Label: Sum of infinite geometric series

COUNTRY	N	DIFF %	A %	B %	C %	D %	OMITTED %	NOT REACHED %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1320	13.1	5.2	67.6	13.1	5.6	7.0	1.5	11.5	14.5
Italy	1097	7.2	3.8	72.0	7.2	5.3	11.0	0.7	3.8	9.3
Lebanon	393	34.8	11.3	30.5	34.8	6.6	14.7	2.0	35.1	34.7
Norway	845	42.7	12.2	27.1	42.7	7.0	9.2	1.8	41.6	43.4
Portugal	1360	17.5	5.1	57.6	17.5	6.5	11.5	1.8	15.2	20.0
Russian Federation	2532	50.4	14.6	21.7	50.4	10.1	2.9	0.3	51.8	49.0
Russian Federation 6hr+	1146	66.0	13.6	12.8	66.0	4.0	3.4	0.3	65.2	66.6
Slovenia	957	37.8	13.7	28.4	37.8	9.2	10.6	0.3	33.4	44.3
Sweden	1297	27.1	14.2	39.9	27.1	9.5	7.3	1.9	21.1	31.5
United States	988	35.2	9.9	43.5	35.2	7.4	3.9	0.1	33.1	37.2
International Avg (n=9)	10789	29.5	10.0	43.1	29.5	7.5	8.7	1.2	27.4	31.6

DIFF = Percent correct
 Because of missing gender information, some totals may appear inconsistent.

M5_02 (MA23185): Algebra / Applying Type: MC Key: A
 Label: Values of a and b in given function

COUNTRY	N	DIFF %	A %	B %	C %	D %	OMITTED %	NOT REACHED %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1320	47.4	47.4	13.2	20.7	4.8	12.0	1.9	44.5	50.1
Italy	.	.	.	.	.	.	.	.	.	.
Lebanon	392	12.0	12.0	7.8	70.0	2.2	5.5	2.4	9.0	13.8
Norway	844	25.0	25.0	18.0	32.7	7.9	14.1	2.4	21.2	27.5
Portugal	.	.	.	.	.	.	.	.	.	.
Russian Federation	2532	55.5	55.5	14.2	17.3	5.4	7.2	0.4	54.9	56.2
Russian Federation 6hr+	1146	71.9	71.9	9.6	10.9	3.0	4.2	0.3	67.2	75.6
Slovenia	957	52.6	52.6	11.4	19.7	5.6	10.2	0.4	53.6	51.1
Sweden	1297	35.4	35.4	19.4	24.6	9.3	8.8	2.5	34.7	36.0
United States	988	54.8	54.8	15.3	18.9	5.2	5.5	0.3	52.4	57.2
International Avg (n=7)	8330	40.4	40.4	14.2	29.1	5.8	9.0	1.5	38.6	41.7

DIFF = Percent correct
 Because of missing gender information, some totals may appear inconsistent.

M5_03 (MA23054): Algebra / Applying Type: CR 2 Points
 Label: What is the value of x in equation

COUNTRY	N	20 %	21 %	10 %	70 %	71 %	79 %	OMITTED %	NOT REACHED %	V1 %	V2 %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1320	7.0	0.7	15.2	0.6	10.4	43.2	20.2	2.7	22.9	7.7	6.8	8.5
Italy	1095	5.7	0.0	20.6	0.5	5.8	25.4	40.9	1.2	26.3	5.7	4.5	6.4
Lebanon	392	18.2	0.2	37.2	5.8	0.3	18.7	16.5	3.3	55.5	18.3	24.5	14.8
Norway	845	7.2	1.4	10.3	0.5	21.0	34.1	22.7	2.8	18.9	8.6	5.4	10.7
Portugal	1360	11.2	0.3	26.5	0.1	6.2	33.4	19.6	2.8	38.0	11.5	11.9	11.1
Russian Federation	2532	39.6	0.0	16.9	0.1	5.0	15.7	22.2	0.5	56.5	39.6	40.3	38.8
Russian Federation 6hr+	1146	50.2	0.0	18.3	0.1	3.4	13.6	13.9	0.5	68.5	50.2	50.2	50.2
Slovenia	957	27.1	0.1	13.7	0.0	4.0	37.7	16.9	0.5	40.9	27.2	27.1	27.4
Sweden	1297	2.7	3.2	8.0	0.4	4.7	33.9	43.9	3.0	14.0	6.0	4.3	7.2
United States	988	9.9	3.5	16.7	1.9	7.7	44.1	15.8	0.5	30.1	13.4	13.0	13.7
International Avg (n=9)	10786	14.3	1.0	18.4	1.1	7.2	31.8	24.3	1.9	33.7	15.3	15.3	15.4

V1 = Percent scoring 1 pt or better; V2 = Percent scoring 2 pts; Percent right for boys and girls corresponds to percent obtaining full credit.
 Because of missing gender information, some totals may appear inconsistent.

M5_04 (MA23064): Algebra / Knowing Type: MC Key: A
 Label: What is the value of k in polynomial

COUNTRY	N	DIFF %	A %	B %	C %	D %	OMITTED %	NOT REACHED %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1320	31.3	31.3	16.3	19.7	12.4	17.5	2.9	27.5	34.6
Italy	1097	21.8	21.8	18.6	19.2	15.5	22.7	2.2	23.0	21.0
Lebanon	391	68.8	68.8	8.7	2.0	9.2	7.0	4.4	65.6	70.6
Norway	845	27.3	27.3	19.9	19.6	12.3	18.0	2.9	26.3	28.0
Portugal	1360	26.4	26.4	16.3	19.9	14.3	19.1	4.1	27.3	25.4
Russian Federation	2532	32.8	32.8	20.5	24.3	10.7	11.3	0.6	30.9	34.6
Russian Federation 6hr+	1146	42.3	42.3	17.2	19.0	9.8	10.9	0.7	40.1	44.0
Slovenia	957	43.6	43.6	13.1	14.5	16.4	11.9	0.6	43.5	43.6
Sweden	1297	23.9	23.9	24.3	18.1	16.8	13.3	3.6	24.1	23.8
United States	988	33.6	33.6	23.1	22.0	11.1	9.1	1.2	28.2	38.7
International Avg (n=9)	10787	34.4	34.4	17.9	17.7	13.2	14.4	2.5	32.9	35.6

DIFF = Percent correct
 Because of missing gender information, some totals may appear inconsistent.

M5_05A (MA23131A): Algebra / Applying Type: CR 1 Point
 Label: Length of straight line AB in meters

COUNTRY	N	10 %	70 %	79 %	OMITTED %	NOT REACHED %	V1 %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1320	26.1	2.7	21.5	45.1	4.6	26.1	18.8	32.5
Italy	1097	21.2	1.7	18.0	56.2	2.9	21.2	19.2	22.4
Lebanon	393	33.9	6.0	19.0	35.2	5.8	33.9	34.1	33.8
Norway	845	33.5	4.0	24.4	33.9	4.1	33.5	31.2	35.1
Portugal	1360	56.8	0.7	12.3	24.4	5.7	56.8	56.6	57.1
Russian Federation	2532	40.6	6.1	20.4	31.8	1.1	40.6	38.0	43.3
Russian Federation 6hr+	1146	51.5	4.0	20.4	22.7	1.4	51.5	47.8	54.4
Slovenia	957	20.9	2.7	30.4	44.8	1.2	20.9	16.6	27.3
Sweden	1297	35.9	2.5	26.5	30.3	4.8	35.9	37.8	34.5
United States	988	60.3	3.8	23.5	11.2	1.2	60.3	57.1	63.5
International Avg (n=9)	10789	36.6	3.4	21.8	34.8	3.5	36.6	34.4	38.8

V1 = Percent scoring 1 pt or better; V2 = Percent scoring 2 pts; Percent right for boys and girls corresponds to percent obtaining full credit.
 Because of missing gender information, some totals may appear inconsistent.

M5_05B (MA23131B): Calculus / Applying Type: CR 1 Point
Label: Cost to paint the deck

COUNTRY	N	10 %	11 %	70 %	79 %	OMITTED %	NOT REACHED %	V1 %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1320	8.6	0.5	3.2	23.6	58.4	5.7	9.1	5.3	12.4
Italy	1097	4.1	0.2	1.6	22.5	67.9	3.7	4.2	3.0	5.0
Lebanon	393	10.6	0.0	2.3	28.0	52.4	6.7	10.6	10.9	10.5
Norway	845	12.8	0.4	3.5	30.5	48.4	4.4	13.2	12.3	13.8
Portugal	1360	1.3	0.0	6.0	24.4	61.4	6.9	1.3	0.8	1.9
Russian Federation	2532	12.8	0.3	5.5	34.9	45.1	1.4	13.1	10.9	15.3
Russian Federation 6hr+	1146	14.6	0.1	6.9	38.9	37.8	1.6	14.8	14.0	15.4
Slovenia	957	4.0	0.5	3.4	26.3	64.5	1.3	4.5	3.0	6.8
Sweden	1297	17.2	0.3	2.7	34.5	39.6	5.6	17.6	15.2	19.3
United States	988	29.3	0.7	5.3	45.5	17.8	1.4	29.9	26.6	33.1
International Avg (n=9)	10789	11.2	0.3	3.7	30.0	50.6	4.1	11.5	9.8	13.1

V1 = Percent scoring 1 pt or better; V2 = Percent scoring 2 pts; Percent right for boys and girls corresponds to percent obtaining full credit.
Because of missing gender information, some totals may appear inconsistent.

M5_06 (MA23157): Calculus / Reasoning Type: CR 2 Points
 Label: Find point of maxima and inflection

COUNTRY	N	20 %	10 %	11 %	79 %	OMITTED %	NOT REACHED %	V1 %	V2 %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1320	5.1	11.3	22.5	36.3	18.6	6.1	39.0	5.1	2.4	7.4
Italy	1095	6.6	3.4	15.2	26.9	43.7	4.1	25.3	6.6	6.0	7.0
Lebanon	393	21.7	5.8	35.5	22.1	8.2	6.7	62.9	21.7	16.0	24.9
Norway	845	17.1	2.0	37.4	25.0	13.8	4.8	56.5	17.1	13.6	19.4
Portugal	1360	18.8	15.3	19.9	23.5	14.9	7.6	54.0	18.8	14.6	23.2
Russian Federation	2532	31.7	14.0	23.5	12.3	16.9	1.5	69.2	31.7	31.4	32.1
Russian Federation 6hr+	1146	40.7	16.0	19.9	10.5	11.1	1.8	76.6	40.7	37.8	43.0
Slovenia	957	6.5	6.1	25.5	40.5	20.1	1.4	38.1	6.5	4.0	10.1
Sweden	1297	14.3	8.5	14.6	36.7	19.7	6.1	37.5	14.3	12.4	15.8
United States	988	38.6	6.7	26.6	21.6	5.0	1.4	72.0	38.6	34.0	43.0
International Avg (n=9)	10787	17.8	8.1	24.5	27.2	17.9	4.4	50.5	17.8	14.9	20.3

V1 = Percent scoring 1 pt or better; V2 = Percent scoring 2 pts; Percent right for boys and girls corresponds to percent obtaining full credit.
 Because of missing gender information, some totals may appear inconsistent.

M5_07 (MA23045): Calculus / Applying Type: MC Key: C
 Label: What is the value of a

COUNTRY	N	DIFF %	A %	B %	C %	D %	OMITTED %	NOT REACHED %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1320	20.3	15.7	26.6	20.3	13.3	17.8	6.3	15.3	24.8
Italy	1097	19.2	15.0	30.2	19.2	7.8	23.5	4.3	14.2	22.4
Lebanon	393	23.1	22.6	14.1	23.1	9.6	23.9	6.7	20.2	24.7
Norway	845	22.4	14.6	32.2	22.4	10.1	15.6	5.1	20.3	23.7
Portugal	1360	20.8	17.8	28.9	20.8	8.0	16.7	7.8	16.4	25.4
Russian Federation	2532	27.8	19.2	26.5	27.8	15.0	9.9	1.6	26.4	29.2
Russian Federation 6hr+	1146	32.2	13.7	30.0	32.2	11.1	11.1	1.9	29.6	34.2
Slovenia	957	19.9	21.4	29.6	19.9	11.7	16.0	1.4	17.2	23.9
Sweden	1297	26.6	16.5	24.2	26.6	13.4	12.5	6.8	22.2	29.8
United States	988	36.4	15.5	31.3	36.4	8.3	7.0	1.4	34.7	38.1
International Avg (n=9)	10789	24.1	17.6	27.1	24.1	10.8	15.9	4.6	20.8	26.9

DIFF = Percent correct
 Because of missing gender information, some totals may appear inconsistent.

M5_08 (MA23082): Geometry / Applying Type: MC Key: A
 Label: Coordinates of fourth vertex D

COUNTRY	N	DIFF %	A %	B %	C %	D %	OMITTED %	NOT REACHED %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1320	54.0	54.0	13.0	9.4	6.9	9.2	7.5	53.2	54.6
Italy	1097	52.8	52.8	17.4	9.2	7.4	8.4	4.7	52.8	52.8
Lebanon	393	70.7	70.7	6.1	2.2	3.4	8.6	9.0	73.6	69.0
Norway	845	62.2	62.2	9.1	8.0	6.0	8.5	6.2	58.4	64.7
Portugal	1360	36.7	36.7	22.1	12.5	10.9	7.7	10.1	33.7	39.8
Russian Federation	2532	61.2	61.2	14.5	9.2	6.1	6.6	2.3	59.8	62.6
Russian Federation 6hr+	1146	69.3	69.3	12.1	5.9	3.5	6.7	2.5	69.8	69.0
Slovenia	957	53.3	53.3	18.1	9.8	7.4	9.5	1.9	50.8	57.1
Sweden	1297	43.7	43.7	18.6	12.3	8.9	7.0	9.5	43.5	43.7
United States	988	58.6	58.6	16.0	11.0	8.5	4.1	1.8	53.5	63.4
International Avg (n=9)	10789	54.8	54.8	15.0	9.3	7.3	7.7	5.9	53.3	56.4

DIFF = Percent correct
 Because of missing gender information, some totals may appear inconsistent.

M5_09 (MA23020): Geometry / Knowing Type: MC Key: D
Label: Amplitude and period of function

COUNTRY	N	DIFF %	A %	B %	C %	D %	OMITTED %	NOT REACHED %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1320	37.0	21.6	6.4	13.0	37.0	13.7	8.3	35.7	38.1
Italy	1097	29.7	26.1	9.2	15.3	29.7	14.9	4.8	25.0	32.7
Lebanon	393	38.4	30.7	5.2	5.4	38.4	11.1	9.2	36.8	39.3
Norway	845	38.5	37.1	3.5	4.7	38.5	8.9	7.3	36.6	39.8
Portugal	1360	51.1	14.3	5.1	12.2	51.1	6.4	10.9	52.9	49.2
Russian Federation	2532	45.5	25.8	6.9	12.7	45.5	6.6	2.6	45.2	45.7
Russian Federation 6hr+	1146	54.0	23.8	6.7	8.2	54.0	4.6	2.6	51.5	55.9
Slovenia	957	44.4	24.8	8.1	13.2	44.4	7.6	1.9	43.7	45.5
Sweden	1297	43.0	29.8	4.9	8.2	43.0	4.2	9.9	41.7	44.0
United States	988	60.1	20.3	4.1	10.1	60.1	3.6	1.8	56.2	63.9
International Avg (n=9)	10789	43.1	25.6	5.9	10.5	43.1	8.6	6.3	41.5	44.2

DIFF = Percent correct
Because of missing gender information, some totals may appear inconsistent.

M5_10 (MA23094): Geometry / Applying Type: CR 2 Points
 Label: Find length of BC in triangle ABC

COUNTRY	N	20 %	21 %	22 %	10 %	11 %	12 %	13 %	70 %	79 %	OMITTED %	NOT REACHED %	V1 %	V2 %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1320	0.7	0.0	0.0	0.5	2.9	0.0	1.2	0.2	55.8	28.1	10.5	5.4	0.7	0.7	0.7
Italy	1095	2.4	0.0	0.0	3.8	4.4	0.1	0.0	0.1	43.2	38.0	8.1	10.7	2.4	4.1	1.3
Lebanon	393	12.9	0.0	0.1	6.9	10.6	0.0	0.0	0.8	46.2	12.3	10.1	30.6	13.1	19.0	9.7
Norway	845	3.0	0.0	0.0	7.3	5.5	0.1	0.0	0.2	52.1	22.7	9.0	15.9	3.0	4.8	1.9
Portugal	1360	0.1	0.0	0.0	1.0	0.4	0.0	0.0	0.0	59.8	25.9	12.7	1.6	0.1	0.2	0.1
Russian Federation	2532	17.5	0.2	0.0	7.5	2.8	0.2	0.3	0.0	34.8	32.3	4.3	28.5	17.7	17.3	18.2
Russian Federation 6hr+	1146	30.3	0.2	0.0	9.0	4.1	0.1	0.4	0.0	30.9	21.6	3.4	44.1	30.6	30.4	30.7
Slovenia	957	13.5	0.2	0.0	10.4	5.3	0.2	0.5	0.1	60.5	6.8	2.5	30.2	13.8	13.2	14.5
Sweden	1296	2.8	0.0	0.0	8.0	5.5	0.0	0.1	0.0	49.1	23.7	10.7	16.5	2.8	3.5	2.3
United States	988	2.4	0.1	0.2	11.0	9.1	0.3	0.0	0.4	71.9	2.9	1.9	23.0	2.7	3.7	1.7
International Avg (n=9)	10786	6.2	0.1	0.0	6.3	5.2	0.1	0.2	0.2	52.6	21.4	7.7	18.0	6.3	7.4	5.6

V1 = Percent scoring 1 pt or better; V2 = Percent scoring 2 pts; Percent right for boys and girls corresponds to percent obtaining full credit.
 Because of missing gender information, some totals may appear inconsistent.

M6_01 (MA33201): Algebra / Knowing Type: MC Key: A
Label: Recognize inverse functions g and f on graph

COUNTRY	N	DIFF %	A %	B %	C %	D %	OMITTED %	NOT REACHED %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1326	56.2	56.2	27.8	2.8	2.4	9.4	1.4	53.1	59.0
Italy	1113	37.2	37.2	31.2	5.2	5.8	20.2	0.4	34.1	39.1
Lebanon	386	66.1	66.1	16.6	2.5	3.0	11.8	0.0	67.1	65.6
Norway	851	38.1	38.1	40.7	3.6	4.7	12.2	0.8	36.2	39.2
Portugal	1337	56.2	56.2	20.0	4.9	6.9	10.2	1.7	53.9	58.6
Russian Federation	2514	49.5	49.5	31.4	6.1	6.6	5.9	0.6	47.2	51.8
Russian Federation 6hr+	1138	54.9	54.9	31.2	4.0	2.5	6.8	0.5	50.6	58.8
Slovenia	956	52.2	52.2	28.3	5.1	5.9	8.2	0.3	50.4	55.1
Sweden	1309	36.7	36.7	41.3	4.4	5.1	10.4	2.1	33.2	39.2
United States	978	63.3	63.3	25.6	2.1	2.3	6.4	0.3	64.7	62.2
International Avg (n=9)	10770	50.6	50.6	29.2	4.1	4.7	10.5	0.8	48.9	52.2

DIFF = Percent correct
Because of missing gender information, some totals may appear inconsistent.

M6_02 (MA33016): Algebra / Applying Type: MC Key: C
 Label: Solve quadratic inequality given factored equation

COUNTRY	N	DIFF %	A %	B %	C %	D %	OMITTED %	NOT REACHED %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1326	42.2	9.3	18.9	42.2	24.2	3.8	1.6	37.2	46.7
Italy	1113	69.1	4.8	13.6	69.1	8.8	3.2	0.5	69.8	68.7
Lebanon	386	66.2	6.8	9.3	66.2	10.1	7.4	0.1	67.5	65.5
Norway	851	48.0	6.2	26.4	48.0	13.6	4.2	1.6	48.8	47.5
Portugal	1337	59.4	6.0	15.8	59.4	14.4	2.1	2.3	61.3	57.5
Russian Federation	2514	76.7	3.8	9.2	76.7	8.5	1.2	0.7	76.2	77.2
Russian Federation 6hr+	1138	84.5	1.7	6.6	84.5	6.1	0.6	0.5	84.5	84.5
Slovenia	956	57.5	4.7	21.3	57.5	13.2	3.0	0.3	55.0	61.5
Sweden	1309	42.4	17.6	13.4	42.4	18.5	4.8	3.3	40.9	43.4
United States	978	48.2	10.4	14.0	48.2	22.2	4.9	0.3	47.1	49.2
International Avg (n=9)	10770	56.6	7.7	15.8	56.6	14.8	3.8	1.2	56.0	57.5

DIFF = Percent correct
 Because of missing gender information, some totals may appear inconsistent.

M6_03 (MA33083): Algebra / Applying Type: CR 1 Point
 Label: Half life radioactivity threshold given $\ln(0.05)$

COUNTRY	N	10 %	79 %	OMITTED %	NOT REACHED %	V1 %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1326	45.1	25.0	28.0	2.0	45.1	40.4	49.3
Italy	1113	15.3	21.8	62.3	0.6	15.3	13.9	16.1
Lebanon	386	41.5	41.4	16.9	0.1	41.5	38.1	43.6
Norway	851	52.8	23.2	22.4	1.7	52.8	58.1	49.6
Portugal	1337	69.1	14.8	13.6	2.4	69.1	71.9	66.3
Russian Federation	2514	34.1	26.1	39.1	0.7	34.1	31.1	37.1
Russian Federation 6hr+	1138	44.7	21.5	33.3	0.5	44.7	42.1	47.0
Slovenia	956	17.0	36.9	45.8	0.3	17.0	14.3	21.3
Sweden	1309	41.7	34.2	20.6	3.4	41.7	44.1	40.0
United States	978	56.7	31.2	11.7	0.3	56.7	55.7	57.6
International Avg (n=9)	10770	41.5	28.3	28.9	1.3	41.5	40.8	42.3

V1 = Percent scoring 1 pt or better; V2 = Percent scoring 2 pts; Percent right for boys and girls corresponds to percent obtaining full credit.
 Because of missing gender information, some totals may appear inconsistent.

M6_04 (MA33143): Algebra / Applying Type: CR 1 Point
 Label: Use given root to find quadratic coefficients

COUNTRY	N	10 %	79 %	OMITTED %	NOT REACHED %	V1 %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1326	6.8	66.8	23.6	2.8	6.8	5.3	8.2
Italy	1112	24.3	44.4	30.4	1.0	24.3	23.7	24.7
Lebanon	386	50.1	34.7	14.8	0.4	50.1	47.7	51.5
Norway	851	20.0	51.4	25.6	3.0	20.0	21.3	19.2
Portugal	1337	14.9	53.8	27.7	3.7	14.9	13.6	16.2
Russian Federation	2514	46.0	36.1	17.1	0.9	46.0	45.7	46.2
Russian Federation 6hr+	1138	59.8	30.5	8.8	0.9	59.8	57.7	61.7
Slovenia	956	26.4	70.3	3.1	0.3	26.4	22.6	32.5
Sweden	1309	14.8	67.6	13.9	3.7	14.8	14.8	14.8
United States	978	29.1	64.6	5.7	0.5	29.1	30.1	28.3
International Avg (n=9)	10769	25.8	54.4	18.0	1.8	25.8	25.0	26.8

V1 = Percent scoring 1 pt or better; V2 = Percent scoring 2 pts; Percent right for boys and girls corresponds to percent obtaining full credit.
 Because of missing gender information, some totals may appear inconsistent.

M6_05 (MA33198): Calculus / Knowing Type: MC Key: B
 Label: Find integral of sum involving e

COUNTRY	N	DIFF %	A %	B %	C %	D %	OMITTED %	NOT REACHED %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1326	66.3	8.1	66.3	10.5	4.0	7.6	3.4	68.3	64.6
Italy	1113	69.3	7.6	69.3	8.8	3.3	10.0	1.0	70.9	68.3
Lebanon	386	90.3	1.3	90.3	3.3	1.2	3.3	0.6	94.4	87.9
Norway	851	75.0	7.1	75.0	6.3	3.3	4.6	3.7	75.7	74.7
Portugal	1337	18.3	5.3	18.3	25.5	9.3	37.3	4.3	17.0	19.7
Russian Federation	2514	59.4	10.3	59.4	18.2	5.2	5.9	1.0	57.6	61.3
Russian Federation 6hr+	1138	69.3	6.3	69.3	13.4	4.2	5.6	1.2	71.5	67.4
Slovenia	956	66.9	6.8	66.9	11.8	6.9	7.4	0.3	67.0	66.6
Sweden	1309	59.4	11.9	59.4	11.1	7.9	5.6	4.1	62.3	57.4
United States	978	66.1	8.3	66.1	15.0	3.9	6.2	0.5	65.9	66.3
International Avg (n=9)	10770	63.5	7.4	63.5	12.3	5.0	9.8	2.1	64.4	63.0

DIFF = Percent correct
 Because of missing gender information, some totals may appear inconsistent.

M6_06 (MA33227): Calculus / Reasoning Type: CR 1 Point
Label: Josh's statement about left- and right-hand limits

COUNTRY	N	10 %	79 %	OMITTED %	NOT REACHED %	V1 %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1326	19.4	52.9	23.6	4.1	19.4	13.3	25.0
Italy	1113	15.7	48.7	33.9	1.7	15.7	14.9	16.1
Lebanon	386	42.7	45.1	11.3	1.0	42.7	40.1	44.2
Norway	851	18.9	30.0	46.9	4.2	18.9	15.4	20.9
Portugal	1337	35.7	38.0	20.9	5.4	35.7	38.3	32.9
Russian Federation	2514	11.4	28.3	58.9	1.4	11.4	11.3	11.5
Russian Federation 6hr+	1138	16.2	34.8	47.6	1.4	16.2	14.6	17.7
Slovenia	956	16.4	57.4	25.7	0.5	16.4	12.4	22.9
Sweden	1309	14.6	42.5	37.6	5.3	14.6	11.4	16.9
United States	978	43.4	47.0	8.9	0.7	43.4	39.6	46.7
International Avg (n=9)	10770	24.2	43.3	29.8	2.7	24.2	21.8	26.3

V1 = Percent scoring 1 pt or better; V2 = Percent scoring 2 pts; Percent right for boys and girls corresponds to percent obtaining full credit.
Because of missing gender information, some totals may appear inconsistent.

M6_07 (MA33079): Calculus / Applying Type: MC Key: C
Label: Find function maximum given signed intervals

COUNTRY	N	DIFF %	A %	B %	C %	D %	OMITTED %	NOT REACHED %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1326	39.8	10.8	33.2	39.8	5.1	6.8	4.2	37.1	42.2
Italy	1113	48.4	8.3	17.8	48.4	9.7	13.3	2.5	46.3	49.8
Lebanon	386	53.8	10.5	17.4	53.8	2.3	15.0	1.0	59.2	50.7
Norway	851	48.4	10.2	21.0	48.4	8.6	6.5	5.3	51.1	46.8
Portugal	1337	62.8	9.7	17.9	62.8	2.0	2.1	5.5	63.5	62.0
Russian Federation	2514	50.7	10.7	20.5	50.7	10.4	5.9	1.8	50.6	50.9
Russian Federation 6hr+	1138	58.9	9.0	18.3	58.9	5.6	5.9	2.3	58.6	59.2
Slovenia	956	43.1	13.0	25.0	43.1	10.1	7.8	1.0	40.1	48.0
Sweden	1309	51.2	12.1	15.6	51.2	4.9	9.6	6.5	50.2	52.0
United States	978	61.2	12.4	15.7	61.2	4.3	5.7	0.7	61.2	61.2
International Avg (n=9)	10770	51.1	10.9	20.4	51.1	6.4	8.1	3.2	51.0	51.5

DIFF = Percent correct
Because of missing gender information, some totals may appear inconsistent.

M6_08 (MA33220): Calculus / Reasoning Type: CR 2 Points
Label: Sketch function given point and properties

COUNTRY	N	20 %	10 %	79 %	OMITTED %	NOT REACHED %	V1 %	V2 %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1326	23.8	43.7	13.3	14.1	5.0	67.6	23.8	21.7	25.8
Italy	1110	36.3	16.6	20.4	23.2	3.6	52.8	36.3	35.5	36.7
Lebanon	386	56.3	17.2	14.1	10.0	2.4	73.5	56.3	60.1	54.2
Norway	851	18.6	26.5	32.5	16.9	5.6	45.1	18.6	18.9	18.3
Portugal	1337	29.1	22.7	31.0	11.5	5.6	51.8	29.1	25.1	33.3
Russian Federation	2514	23.7	20.7	29.1	24.7	1.8	44.4	23.7	23.1	24.3
Russian Federation 6hr+	1138	34.9	26.1	22.4	14.4	2.3	61.0	34.9	35.1	34.6
Slovenia	956	31.2	24.3	36.6	7.0	1.0	55.5	31.2	25.8	39.8
Sweden	1309	18.4	33.1	21.4	20.1	7.0	51.5	18.4	19.0	17.9
United States	978	43.8	24.8	26.4	4.2	0.9	68.5	43.8	40.6	46.6
International Avg (n=9)	10767	31.2	25.5	25.0	14.6	3.6	56.7	31.2	30.0	33.0

V1 = Percent scoring 1 pt or better; V2 = Percent scoring 2 pts; Percent right for boys and girls corresponds to percent obtaining full credit.
Because of missing gender information, some totals may appear inconsistent.

M6_09 (MA33150): Geometry / Knowing Type: MC Key: C
Label: Find vector difference diagram given sum diagram

COUNTRY	N	DIFF %	A %	B %	C %	D %	OMITTED %	NOT REACHED %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1326	76.3	3.5	10.9	76.3	2.6	1.1	5.6	75.0	77.4
Italy	1113	38.1	9.2	28.0	38.1	11.4	9.1	4.1	31.0	42.5
Lebanon	386	66.9	9.0	8.5	66.9	6.1	6.7	2.8	56.0	73.2
Norway	851	75.5	1.5	10.9	75.5	2.1	3.0	7.1	73.2	76.7
Portugal	1337	51.2	5.3	27.4	51.2	6.3	3.0	6.6	45.8	56.8
Russian Federation	2514	56.7	12.4	19.7	56.7	7.3	1.9	2.0	54.1	59.3
Russian Federation 6hr+	1138	61.4	13.2	16.2	61.4	4.2	2.7	2.3	58.1	64.5
Slovenia	956	58.3	4.9	24.5	58.3	8.7	2.4	1.1	53.2	66.6
Sweden	1309	45.1	5.5	28.5	45.1	9.7	2.9	8.3	37.6	50.4
United States	978	39.4	9.0	37.2	39.4	8.6	4.9	1.0	33.4	44.7
International Avg (n=9)	10770	56.4	6.7	21.7	56.4	7.0	3.9	4.3	51.0	60.8

DIFF = Percent correct
Because of missing gender information, some totals may appear inconsistent.

M6_10 (MA33233): Geometry / Reasoning Type: CR 2 Points
 Label: Explain length of radius of a circle

COUNTRY	N	20 %	10 %	79 %	OMITTED %	NOT REACHED %	V1 %	V2 %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1326	25.5	5.0	28.7	34.9	6.0	30.5	25.5	20.1	30.3
Italy	1112	24.5	8.3	25.2	36.3	5.7	32.8	24.5	22.0	26.0
Lebanon	386	34.6	6.5	31.7	23.0	4.2	41.1	34.6	27.8	38.5
Norway	851	32.0	6.3	25.8	27.9	8.0	38.2	32.0	30.7	32.7
Portugal	1337	36.3	12.8	22.7	20.9	7.4	49.0	36.3	35.0	37.7
Russian Federation	2514	38.6	7.9	23.1	28.2	2.2	46.5	38.6	33.7	43.6
Russian Federation 6hr+	1138	56.2	6.5	16.7	17.6	3.0	62.7	56.2	53.0	59.2
Slovenia	956	33.3	13.0	38.3	13.7	1.8	46.2	33.3	29.3	39.8
Sweden	1309	21.7	10.9	30.6	28.1	8.7	32.6	21.7	20.6	22.4
United States	978	15.4	10.3	63.8	9.2	1.3	25.6	15.4	10.8	19.4
International Avg (n=9)	10769	29.1	9.0	32.2	24.7	5.0	38.1	29.1	25.6	32.3

V1 = Percent scoring 1 pt or better; V2 = Percent scoring 2 pts; Percent right for boys and girls corresponds to percent obtaining full credit.
 Because of missing gender information, some totals may appear inconsistent.

M6_11 (MA33157): Geometry / Reasoning Type: MC Key: D
Label: Choose sinusoid parameter change for given graphs

COUNTRY	N	DIFF %	A %	B %	C %	D %	OMITTED %	NOT REACHED %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1326	34.1	22.0	5.5	25.7	34.1	4.1	8.5	32.9	35.2
Italy	1113	22.2	16.3	12.7	31.0	22.2	10.0	7.8	19.3	23.9
Lebanon	386	36.1	13.8	5.7	28.5	36.1	10.1	5.8	40.8	33.4
Norway	851	37.0	18.8	6.5	24.3	37.0	2.8	10.6	33.3	39.1
Portugal	1337	41.1	15.4	5.5	24.9	41.1	4.2	9.0	37.2	45.2
Russian Federation	2514	31.1	11.9	11.9	35.9	31.1	5.2	4.1	29.2	32.9
Russian Federation 6hr+	1138	35.4	13.3	8.2	33.6	35.4	5.4	4.1	33.4	37.2
Slovenia	956	33.1	25.6	4.4	30.5	33.1	3.4	3.0	30.5	37.2
Sweden	1309	35.0	18.7	5.2	27.4	35.0	3.4	10.4	31.5	37.4
United States	978	36.5	23.1	5.2	28.0	36.5	5.2	2.0	34.4	38.4
International Avg (n=9)	10770	34.0	18.4	7.0	28.5	34.0	5.4	6.8	32.1	35.9

DIFF = Percent correct
Because of missing gender information, some totals may appear inconsistent.

M6_12 (MA33155): Geometry / Reasoning Type: CR 1 Point
 Label: Prove property of supplementary angles' sines

COUNTRY	N	10 %	11 %	12 %	79 %	OMITTED %	NOT REACHED %	V1 %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1326	1.3	0.8	0.0	40.3	46.8	10.7	2.1	1.8	2.4
Italy	1113	3.1	3.8	0.1	28.4	54.2	10.5	7.0	7.0	7.0
Lebanon	386	21.0	0.2	0.0	60.4	12.2	6.3	21.1	18.0	22.9
Norway	851	1.4	1.0	0.1	39.8	46.1	11.5	2.6	2.5	2.6
Portugal	1337	2.3	7.6	0.0	40.9	38.6	10.6	9.9	11.4	8.2
Russian Federation	2514	18.0	2.0	0.0	30.1	43.4	6.6	20.0	18.9	21.0
Russian Federation 6hr+	1138	32.5	2.7	0.0	26.8	31.3	6.7	35.2	34.7	35.8
Slovenia	955	5.0	2.3	0.1	51.6	36.2	4.8	7.4	5.7	10.1
Sweden	1309	3.6	3.8	0.4	43.8	36.3	12.1	7.8	7.2	8.2
United States	978	0.5	0.5	0.2	75.2	18.8	4.8	1.2	0.7	1.7
International Avg (n=9)	10769	6.2	2.4	0.1	45.6	37.0	8.7	8.8	8.1	9.4

V1 = Percent scoring 1 pt or better; V2 = Percent scoring 2 pts; Percent right for boys and girls corresponds to percent obtaining full credit.
 Because of missing gender information, some totals may appear inconsistent.

M7_01 (MA33202): Algebra / Applying Type: MC Key: A
 Label: Find interval for greatest function relationship

COUNTRY	N	DIFF %	A %	B %	C %	D %	OMITTED %	NOT REACHED %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1323	52.1	52.1	21.6	12.6	5.3	6.9	1.5	50.4	53.6
Italy	1101	35.6	35.6	24.5	12.7	8.7	17.6	0.9	35.7	35.6
Lebanon	387	47.7	47.7	17.7	13.5	5.4	13.5	2.3	47.1	48.0
Norway	856	34.9	34.9	32.9	8.7	6.5	15.5	1.6	32.2	36.8
Portugal	1324	49.1	49.1	21.3	12.7	5.6	9.5	1.7	48.9	49.4
Russian Federation	2520	41.2	41.2	28.3	14.8	7.8	7.3	0.5	40.8	41.6
Russian Federation 6hr+	1140	57.6	57.6	21.2	11.9	4.7	3.9	0.7	50.0	64.3
Slovenia	960	30.8	30.8	29.6	16.2	9.8	12.8	0.7	26.7	37.7
Sweden	1315	33.1	33.1	29.6	15.7	11.2	8.3	2.1	31.7	34.1
United States	985	43.3	43.3	28.4	12.7	7.6	7.5	0.5	41.5	44.9
International Avg (n=9)	10771	40.9	40.9	26.0	13.3	7.5	11.0	1.3	39.5	42.4

DIFF = Percent correct
 Because of missing gender information, some totals may appear inconsistent.

M7_02 (MA33042): Algebra / Knowing Type: CR 1 Point
Label: Evaluate compound function h(3)

COUNTRY	N	10 %	79 %	OMITTED %	NOT REACHED %	V1 %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1323	64.7	25.5	8.0	1.7	64.7	65.5	64.1
Italy	1101	39.5	26.4	33.3	0.9	39.5	45.8	35.7
Lebanon	387	81.3	13.0	3.4	2.3	81.3	82.6	80.6
Norway	856	44.9	34.0	18.8	2.3	44.9	46.8	43.7
Portugal	1324	69.8	22.2	6.0	2.0	69.8	72.1	67.3
Russian Federation	2520	44.9	26.3	28.0	0.8	44.9	44.5	45.4
Russian Federation 6hr+	1140	62.2	20.2	16.7	1.0	62.2	57.6	66.2
Slovenia	959	55.3	38.4	5.4	0.9	55.3	55.2	55.3
Sweden	1315	38.1	39.7	19.5	2.7	38.1	39.8	37.1
United States	985	75.1	21.4	2.8	0.7	75.1	74.3	75.9
International Avg (n=9)	10770	57.1	27.4	13.9	1.6	57.1	58.5	56.1

V1 = Percent scoring 1 pt or better; V2 = Percent scoring 2 pts; Percent right for boys and girls corresponds to percent obtaining full credit.
Because of missing gender information, some totals may appear inconsistent.

M7_03 (MA33094): Algebra / Applying Type: CR 1 Point
 Label: Given amps and ohms, solve for volts in Complex

COUNTRY	N	10 %	79 %	OMITTED %	NOT REACHED %	V1 %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1323	68.4	23.3	6.1	2.2	68.4	69.0	67.8
Italy	1101	23.8	53.4	21.7	1.1	23.8	24.9	23.1
Lebanon	387	85.2	8.7	3.2	3.0	85.2	89.5	82.7
Norway	856	11.2	71.4	14.9	2.5	11.2	9.3	12.5
Portugal	1324	52.7	31.7	13.5	2.2	52.7	57.3	47.6
Russian Federation	2520	30.4	48.9	19.8	0.8	30.4	32.1	28.6
Russian Federation 6hr+	1140	44.7	43.4	10.9	1.0	44.7	41.7	47.3
Slovenia	959	62.7	24.9	11.3	1.1	62.7	62.4	63.2
Sweden	1315	38.3	45.6	12.7	3.4	38.3	42.0	35.9
United States	985	40.9	53.6	4.7	0.7	40.9	38.3	43.4
International Avg (n=9)	10770	46.0	40.2	12.0	1.9	46.0	47.2	45.0

V1 = Percent scoring 1 pt or better; V2 = Percent scoring 2 pts; Percent right for boys and girls corresponds to percent obtaining full credit.
 Because of missing gender information, some totals may appear inconsistent.

M7_04 (MA33123): Algebra / Applying Type: MC Key: D
 Label: Domain of ln with rational function argument

COUNTRY	N	DIFF %	A %	B %	C %	D %	OMITTED %	NOT REACHED %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1323	33.6	25.7	19.7	13.5	33.6	4.7	2.7	31.7	35.4
Italy	1101	52.6	21.1	13.2	9.4	52.6	2.6	1.2	61.3	47.5
Lebanon	386	55.5	5.6	25.2	8.7	55.5	2.1	3.0	56.9	54.7
Norway	856	28.0	29.0	15.5	19.5	28.0	5.3	2.8	27.4	28.4
Portugal	1324	29.4	26.2	26.9	11.1	29.4	3.5	2.8	28.4	30.6
Russian Federation	2520	50.8	14.4	12.5	17.5	50.8	3.9	1.0	51.1	50.4
Russian Federation 6hr+	1140	64.0	10.6	8.9	13.0	64.0	2.4	1.0	63.2	64.7
Slovenia	960	17.5	24.5	26.2	23.9	17.5	6.3	1.6	16.4	19.4
Sweden	1315	20.6	36.6	13.3	20.2	20.6	5.6	3.7	20.1	20.9
United States	985	38.2	27.5	12.6	15.8	38.2	4.6	1.3	33.1	43.3
International Avg (n=9)	10770	36.2	23.4	18.3	15.5	36.2	4.3	2.2	36.3	36.7

DIFF = Percent correct
 Because of missing gender information, some totals may appear inconsistent.

M7_05 (MA33137): Calculus / Knowing Type: MC Key: B
Label: Bounds of integration difference and signed area

COUNTRY	N	DIFF %	A %	B %	C %	D %	OMITTED %	NOT REACHED %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1323	48.0	1.7	48.0	30.1	11.3	5.1	3.8	45.0	50.9
Italy	1101	30.9	4.1	30.9	30.0	14.1	19.3	1.7	29.6	31.6
Lebanon	387	68.8	2.9	68.8	15.0	3.5	6.2	3.6	70.8	67.6
Norway	856	42.6	5.3	42.6	28.4	9.9	10.8	3.0	41.9	43.0
Portugal	1324	18.1	4.9	18.1	22.4	10.3	40.4	3.7	16.8	19.6
Russian Federation	2520	43.5	4.7	43.5	31.2	13.0	6.7	1.1	45.2	41.7
Russian Federation 6hr+	1140	54.8	4.0	54.8	24.9	8.6	6.7	1.0	55.7	54.1
Slovenia	960	34.3	3.1	34.3	31.0	16.6	13.0	2.0	30.0	41.7
Sweden	1315	43.4	4.1	43.4	28.8	11.9	7.5	4.3	41.6	44.5
United States	985	62.0	1.3	62.0	21.1	10.7	3.4	1.5	57.9	66.1
International Avg (n=9)	10771	43.5	3.6	43.5	26.4	11.3	12.5	2.7	42.1	45.2

DIFF = Percent correct
Because of missing gender information, some totals may appear inconsistent.

M7_06 (MA33067): Calculus / Knowing Type: CR 1 Point
 Label: Product rule derivative in terms of unknown

COUNTRY	N	10 %	79 %	OMITTED %	NOT REACHED %	V1 %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1323	44.7	30.3	20.7	4.3	44.7	44.6	44.9
Italy	1101	22.5	20.2	54.9	2.4	22.5	26.9	19.9
Lebanon	387	73.7	13.2	8.1	5.0	73.7	77.9	71.3
Norway	856	20.8	28.9	45.4	4.9	20.8	21.2	20.6
Portugal	1324	35.4	24.4	35.1	5.0	35.4	39.7	30.8
Russian Federation	2520	24.7	19.5	54.6	1.3	24.7	24.6	24.8
Russian Federation 6hr+	1140	40.1	20.2	38.7	1.0	40.1	35.6	44.0
Slovenia	959	22.9	39.9	35.2	2.1	22.9	21.4	25.5
Sweden	1315	18.9	37.6	38.6	4.9	18.9	22.1	16.8
United States	985	47.6	38.2	12.7	1.5	47.6	44.8	50.4
International Avg (n=9)	10770	34.6	28.0	33.9	3.5	34.6	35.9	33.9

V1 = Percent scoring 1 pt or better; V2 = Percent scoring 2 pts; Percent right for boys and girls corresponds to percent obtaining full credit.
 Because of missing gender information, some totals may appear inconsistent.

M7_07 (MA33012): Calculus / Reasoning Type: CR 2 Points
Label: Show chicken house maximization given 3 walls

COUNTRY	N	20 %	10 %	11 %	79 %	OMITTED %	NOT REACHED %	V1 %	V2 %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1323	14.9	3.7	2.4	36.7	37.1	5.3	21.0	14.9	10.2	19.3
Italy	1099	15.5	5.7	1.0	21.6	53.3	3.0	22.1	15.5	18.7	13.6
Lebanon	387	12.1	14.0	0.6	41.8	25.7	5.8	26.7	12.1	17.1	9.3
Norway	856	6.1	14.2	0.9	39.1	33.0	6.7	21.2	6.1	6.7	5.7
Portugal	1324	19.3	7.5	0.9	41.6	24.7	6.0	27.8	19.3	19.4	19.2
Russian Federation	2520	15.0	7.1	0.2	26.9	48.9	1.9	22.3	15.0	15.0	15.0
Russian Federation 6hr+	1140	27.7	10.5	0.8	23.0	36.6	1.4	39.0	27.7	22.4	32.4
Slovenia	959	7.4	5.2	1.1	63.2	20.9	2.2	13.8	7.4	5.6	10.6
Sweden	1313	13.0	16.2	0.8	31.3	32.9	5.8	30.0	13.0	17.7	9.9
United States	985	9.8	13.0	1.0	63.5	10.9	1.7	23.9	9.8	7.3	12.3
International Avg (n=9)	10766	12.6	9.6	1.0	40.6	31.9	4.3	23.2	12.6	13.1	12.8

V1 = Percent scoring 1 pt or better; V2 = Percent scoring 2 pts; Percent right for boys and girls corresponds to percent obtaining full credit.
Because of missing gender information, some totals may appear inconsistent.

M7_08 (MA33075): Calculus / Reasoning Type: MC Key: D
 Label: Derivative properties given graph

COUNTRY	N	DIFF %	A %	B %	C %	D %	OMITTED %	NOT REACHED %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1323	14.3	19.2	16.1	36.0	14.3	8.5	5.8	11.2	17.1
Italy	1101	29.6	10.3	16.6	23.5	29.6	17.1	3.0	30.2	29.2
Lebanon	387	38.1	13.8	3.9	32.3	38.1	5.4	6.4	35.6	39.6
Norway	856	29.8	19.9	16.0	17.2	29.8	9.5	7.6	27.0	31.6
Portugal	1324	44.3	11.9	15.4	16.8	44.3	5.0	6.6	43.1	45.5
Russian Federation	2520	32.4	14.4	15.1	30.7	32.4	5.5	2.0	33.4	31.3
Russian Federation 6hr+	1140	39.6	13.0	11.8	28.6	39.6	5.6	1.4	38.0	40.9
Slovenia	960	24.9	17.7	17.6	25.5	24.9	12.1	2.2	23.9	26.6
Sweden	1315	34.4	17.9	14.9	20.9	34.4	5.8	6.2	33.9	34.7
United States	985	44.2	14.8	16.5	19.2	44.2	3.5	1.7	38.5	49.7
International Avg (n=9)	10771	32.4	15.5	14.7	24.7	32.4	8.1	4.6	30.8	33.9

DIFF = Percent correct
 Because of missing gender information, some totals may appear inconsistent.

M7_09 (MA33212): Calculus / Applying Type: MC Key: B
Label: Limit of a rational function with k

COUNTRY	N	DIFF %	A %	B %	C %	D %	OMITTED %	NOT REACHED %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1323	17.0	10.8	17.0	40.0	20.1	5.4	6.7	13.2	20.6
Italy	1101	34.8	11.1	34.8	23.9	19.3	7.4	3.5	37.6	33.2
Lebanon	387	67.0	7.1	67.0	9.5	8.3	1.6	6.4	73.5	63.3
Norway	856	29.6	10.3	29.6	25.6	18.6	7.1	8.8	25.2	32.6
Portugal	1324	40.9	12.2	40.9	18.9	15.0	5.3	7.8	43.2	38.3
Russian Federation	2520	49.4	11.4	49.4	15.6	15.2	6.3	2.2	49.9	48.8
Russian Federation 6hr+	1140	50.9	10.0	50.9	18.0	13.2	6.4	1.5	50.3	51.4
Slovenia	960	25.6	14.7	25.6	25.5	22.7	8.6	2.9	23.0	30.0
Sweden	1315	20.4	11.3	20.4	27.9	27.9	5.1	7.5	18.6	21.5
United States	985	35.8	13.2	35.8	17.5	27.2	4.0	2.4	32.3	39.2
International Avg (n=9)	10771	35.6	11.3	35.6	22.7	19.4	5.6	5.4	35.2	36.4

DIFF = Percent correct
Because of missing gender information, some totals may appear inconsistent.

M7_10 (MA33186): Geometry / Knowing Type: MC Key: C
Label: Choose sinusoidal graph transformation operations

COUNTRY	N	DIFF %	A %	B %	C %	D %	OMITTED %	NOT REACHED %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1323	40.4	4.2	23.4	40.4	7.3	16.4	8.4	40.3	40.4
Italy	1101	45.5	5.6	18.6	45.5	6.4	19.2	4.8	42.5	47.3
Lebanon	387	60.5	3.8	11.7	60.5	2.7	14.9	6.4	57.4	62.3
Norway	856	40.9	5.2	23.5	40.9	5.7	14.9	9.9	37.3	43.2
Portugal	1324	54.1	4.1	15.7	54.1	7.8	8.5	9.7	52.7	55.7
Russian Federation	2520	63.0	5.7	18.1	63.0	4.6	5.9	2.7	63.4	62.6
Russian Federation 6hr+	1140	75.0	1.9	14.0	75.0	3.2	3.7	2.2	72.8	77.1
Slovenia	960	52.6	6.2	22.8	52.6	7.0	8.0	3.4	50.3	56.5
Sweden	1315	46.1	8.3	20.2	46.1	10.0	6.9	8.6	48.0	44.8
United States	985	50.7	5.6	29.6	50.7	6.9	4.5	2.6	47.2	54.1
International Avg (n=9)	10771	50.4	5.4	20.4	50.4	6.5	11.0	6.3	48.8	51.9

DIFF = Percent correct
Because of missing gender information, some totals may appear inconsistent.

M7_11 (MA33239): Geometry / Reasoning Type: CR 2 Points
 Label: Area of porch of a circular house

COUNTRY	N	20 %	10 %	11 %	79 %	OMITTED %	NOT REACHED %	V1 %	V2 %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1323	7.5	12.6	1.0	36.4	30.5	11.9	21.2	7.5	4.6	10.2
Italy	1100	11.5	9.4	1.1	23.5	46.0	8.6	21.9	11.5	8.7	13.1
Lebanon	387	15.9	15.5	1.9	30.0	28.0	8.8	33.3	15.9	16.3	15.8
Norway	855	22.5	11.4	2.1	25.1	26.0	12.8	36.0	22.5	19.4	24.5
Portugal	1324	17.3	17.7	2.7	28.2	22.5	11.6	37.7	17.3	12.8	22.3
Russian Federation	2520	27.4	10.1	2.3	21.0	35.0	4.1	39.8	27.4	25.0	29.9
Russian Federation 6hr+	1140	37.9	10.3	3.8	20.1	25.3	2.6	52.1	37.9	33.9	41.6
Slovenia	959	18.7	18.6	2.6	35.7	20.0	4.4	39.9	18.7	12.9	28.6
Sweden	1315	19.5	11.4	0.5	27.7	31.1	9.9	31.4	19.5	16.7	21.3
United States	985	25.3	19.4	7.0	38.3	7.3	2.7	51.7	25.3	18.6	31.9
International Avg (n=9)	10768	18.4	14.0	2.4	29.5	27.4	8.3	34.8	18.4	15.0	22.0

V1 = Percent scoring 1 pt or better; V2 = Percent scoring 2 pts; Percent right for boys and girls corresponds to percent obtaining full credit.
 Because of missing gender information, some totals may appear inconsistent.

M7_12 (MA33038): Geometry / Reasoning Type: CR 1 Point
 Label: Explain $3\cos x + 2\sin x < 6$ for all values of x

COUNTRY	N	10 %	11 %	12 %	79 %	OMITTED %	NOT REACHED %	V1 %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1323	26.6	0.3	0.0	18.5	32.1	22.5	26.9	21.0	32.5
Italy	1101	23.4	0.3	0.4	24.7	29.3	22.0	24.1	23.9	24.2
Lebanon	387	40.6	0.0	0.2	23.9	20.8	14.4	40.8	38.2	42.3
Norway	856	17.5	0.0	0.7	28.8	30.3	22.7	18.2	16.4	19.4
Portugal	1324	17.9	1.4	0.0	31.4	29.5	19.9	19.2	17.4	21.2
Russian Federation	2520	28.6	0.0	0.1	18.0	32.9	20.3	28.8	28.2	29.4
Russian Federation 6hr+	1140	48.4	0.1	0.4	16.2	21.4	13.5	48.8	42.7	54.3
Slovenia	959	24.2	0.0	0.2	47.9	17.4	10.4	24.4	18.9	33.7
Sweden	1315	20.8	1.3	0.8	31.1	23.6	22.5	22.8	21.1	23.9
United States	985	22.5	1.5	2.6	56.3	11.3	5.7	26.6	22.2	30.9
International Avg (n=9)	10770	24.7	0.5	0.6	31.2	25.2	17.8	25.8	23.0	28.6

V1 = Percent scoring 1 pt or better; V2 = Percent scoring 2 pts; Percent right for boys and girls corresponds to percent obtaining full credit.
 Because of missing gender information, some totals may appear inconsistent.

M8_01 (MA33027): Algebra / Knowing Type: MC Key: C
Label: Compound quadratic function simplification

COUNTRY	N	DIFF %	A %	B %	C %	D %	OMITTED %	NOT REACHED %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1313	57.8	6.8	11.0	57.8	21.9	2.6	0.0	53.4	61.6
Italy	1102	40.5	11.7	9.3	40.5	27.7	10.7	0.1	46.3	37.0
Lebanon	390	89.1	2.4	1.0	89.1	4.7	2.8	0.0	89.5	88.9
Norway	833	38.3	9.5	11.6	38.3	35.5	5.2	0.0	35.6	40.0
Portugal	1378	64.4	4.1	13.4	64.4	16.2	1.9	0.0	62.8	65.9
Russian Federation	2522	51.4	12.7	7.2	51.4	25.2	3.3	0.1	52.1	50.8
Russian Federation 6hr+	1142	64.0	8.1	4.6	64.0	21.0	2.5	0.0	61.1	66.3
Slovenia	985	63.3	6.1	5.8	63.3	22.9	1.7	0.1	61.4	66.1
Sweden	1306	39.8	12.7	15.0	39.8	28.7	3.8	0.0	40.5	39.3
United States	999	71.6	2.6	9.4	71.6	14.6	1.5	0.3	67.2	75.9
International Avg (n=9)	10828	57.4	7.6	9.3	57.4	21.9	3.7	0.1	56.5	58.4

DIFF = Percent correct
Because of missing gender information, some totals may appear inconsistent.

M8_02 (MA33091): Algebra / Reasoning Type: CR 1 Point
 Label: Exact value of 7th of arithmetic sequence

COUNTRY	N	10 %	79 %	OMITTED %	NOT REACHED %	V1 %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1313	30.0	54.3	15.7	0.0	30.0	27.0	32.6
Italy	1101	28.2	37.2	34.5	0.1	28.2	25.1	30.0
Lebanon	390	35.2	43.1	21.7	0.0	35.2	32.5	36.8
Norway	833	41.2	44.6	14.2	0.0	41.2	40.3	41.7
Portugal	1378	24.2	48.4	27.4	0.0	24.2	22.5	25.9
Russian Federation	2522	61.5	29.2	9.2	0.2	61.5	60.1	62.8
Russian Federation 6hr+	1142	73.2	21.8	5.0	0.0	73.2	71.3	74.8
Slovenia	985	59.4	37.6	2.8	0.1	59.4	59.2	59.8
Sweden	1306	33.4	48.1	18.5	0.0	33.4	29.4	35.9
United States	999	40.7	53.6	5.4	0.3	40.7	37.5	43.9
International Avg (n=9)	10827	39.3	44.0	16.6	0.1	39.3	37.1	41.0

V1 = Percent scoring 1 pt or better; V2 = Percent scoring 2 pts; Percent right for boys and girls corresponds to percent obtaining full credit.
 Because of missing gender information, some totals may appear inconsistent.

M8_03 (MA33106): Algebra / Reasoning Type: MC Key: B
Label: Find expression value after variables change

COUNTRY	N	DIFF %	A %	B %	C %	D %	OMITTED %	NOT REACHED %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1313	26.9	6.8	26.9	26.3	30.9	9.1	0.0	24.5	29.0
Italy	1102	42.8	6.3	42.8	19.8	21.0	10.0	0.1	45.0	41.4
Lebanon	390	58.6	1.6	58.6	11.9	16.2	11.8	0.0	64.7	55.0
Norway	833	32.6	6.0	32.6	22.8	30.7	7.8	0.0	28.2	35.4
Portugal	1378	36.0	6.3	36.0	24.6	24.7	8.3	0.0	34.7	37.3
Russian Federation	2522	63.3	3.4	63.3	15.8	15.6	1.7	0.2	62.2	64.5
Russian Federation 6hr+	1142	79.3	1.9	79.3	8.8	8.7	1.3	0.0	74.6	83.2
Slovenia	985	36.0	5.8	36.0	26.0	21.9	10.1	0.2	31.4	42.7
Sweden	1306	31.6	5.5	31.6	24.0	32.6	6.3	0.0	32.2	31.2
United States	999	45.4	5.7	45.4	25.7	17.1	5.8	0.3	39.9	50.8
International Avg (n=9)	10828	41.5	5.3	41.5	21.9	23.4	7.9	0.1	40.3	43.0

DIFF = Percent correct
Because of missing gender information, some totals may appear inconsistent.

M8_04 (MA33090): Algebra / Reasoning Type: CR 2 Points
Label: Graph of ball thrown - find time above 8m

COUNTRY	N	20 %	10 %	11 %	70 %	71 %	79 %	OMITTED %	NOT REACHED %	V1 %	V2 %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1313	26.3	14.1	4.3	25.6	1.1	13.7	14.7	0.1	44.8	26.3	21.4	30.6
Italy	1097	12.0	25.6	2.0	10.2	0.0	12.3	37.6	0.1	39.7	12.0	12.3	11.9
Lebanon	390	15.9	46.1	2.1	11.9	0.7	11.4	12.0	0.0	64.1	15.9	12.9	17.7
Norway	833	46.2	15.0	3.5	12.4	0.4	10.7	11.8	0.0	64.7	46.2	42.4	48.6
Portugal	1378	50.6	19.2	3.9	13.0	0.5	7.5	5.4	0.0	73.7	50.6	46.6	54.6
Russian Federation	2522	22.9	15.8	1.9	11.4	0.1	23.3	24.4	0.2	40.6	22.9	20.8	25.0
Russian Federation 6hr+	1142	40.1	14.9	3.2	9.2	0.1	16.9	15.7	0.0	58.1	40.1	35.5	43.9
Slovenia	984	15.1	25.6	3.3	21.5	0.0	20.8	13.6	0.2	44.0	15.1	13.1	17.8
Sweden	1305	37.7	4.3	2.5	19.7	0.9	20.9	14.0	0.0	44.5	37.7	34.4	39.8
United States	999	30.3	10.2	1.5	35.1	1.3	16.3	5.0	0.3	41.9	30.3	21.5	39.0
International Avg (n=9)	10821	28.6	19.5	2.8	17.9	0.6	15.2	15.4	0.1	50.9	28.6	25.1	31.7

V1 = Percent scoring 1 pt or better; V2 = Percent scoring 2 pts; Percent right for boys and girls corresponds to percent obtaining full credit.
Because of missing gender information, some totals may appear inconsistent.

M8_05 (MA33126): Calculus / Knowing Type: MC Key: B
Label: Rational function limit to negative infinity

COUNTRY	N	DIFF %	A %	B %	C %	D %	OMITTED %	NOT REACHED %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1313	43.1	2.4	43.1	26.7	23.9	3.8	0.1	41.4	44.5
Italy	1102	65.3	3.3	65.3	18.0	9.1	4.0	0.3	72.2	61.1
Lebanon	390	92.0	0.5	92.0	4.0	2.5	0.7	0.2	89.5	93.5
Norway	833	53.4	13.0	53.4	14.2	11.1	8.3	0.0	50.4	55.3
Portugal	1378	64.3	4.8	64.3	15.2	11.9	3.7	0.1	66.1	62.5
Russian Federation	2522	56.8	13.9	56.8	12.6	10.4	6.2	0.2	56.0	57.5
Russian Federation 6hr+	1142	64.1	8.3	64.1	12.0	10.4	5.2	0.0	61.9	65.9
Slovenia	985	50.2	10.0	50.2	15.4	15.5	8.6	0.2	45.9	56.4
Sweden	1306	42.4	12.7	42.4	23.2	17.0	4.6	0.1	41.5	42.9
United States	999	58.3	9.9	58.3	15.9	12.2	3.5	0.3	52.0	64.7
International Avg (n=9)	10828	58.4	7.8	58.4	16.1	12.6	4.8	0.2	57.2	59.8

DIFF = Percent correct
Because of missing gender information, some totals may appear inconsistent.

M8_06 (MA33118): Calculus / Knowing Type: CR 2 Points
Label: Continuity/differentiability at points (DERIVED)

COUNTRY	N	20 %	10 %	79 %	OMITTED %	NOT REACHED %	V1 %	V2 %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1313	30.0	29.7	37.9	2.2	0.2	59.7	30.0	25.2	34.1
Italy	1102	42.4	19.7	30.0	7.5	0.4	62.1	42.4	44.9	40.9
Lebanon	390	43.7	17.4	33.1	5.5	0.2	61.1	43.7	42.6	44.4
Norway	833	28.5	31.8	36.9	2.8	0.0	60.3	28.5	29.2	28.1
Portugal	1378	16.8	12.2	59.0	12.0	0.1	29.0	16.8	16.7	16.9
Russian Federation	2522	18.0	27.6	42.0	12.3	0.2	45.5	18.0	16.6	19.4
Russian Federation 6hr+	1142	22.9	33.0	34.2	9.8	0.2	55.8	22.9	19.7	25.5
Slovenia	985	13.6	32.3	46.8	7.0	0.3	45.9	13.6	11.6	16.4
Sweden	1306	17.8	28.9	45.7	7.4	0.1	46.7	17.8	20.1	16.4
United States	999	39.6	24.3	33.7	2.1	0.4	63.8	39.6	35.0	44.2
International Avg (n=9)	10828	27.8	24.9	40.6	6.5	0.2	52.7	27.8	26.9	29.0

V1 = Percent scoring 1 pt or better; V2 = Percent scoring 2 pts; Percent right for boys and girls corresponds to percent obtaining full credit.
Because of missing gender information, some totals may appear inconsistent.

M8_06A (MA33118A): Calculus / Knowing Type: MC Key: A
Label: f is continuous at x=1

COUNTRY	N	DIFF %	A %	B %	C %	OMITTED %	NOT REACHED %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1313	83.6	83.6	4.4	9.3	2.4	0.2	82.7	84.5
Italy	1102	77.8	77.8	4.7	8.2	8.9	0.4	79.4	76.8
Lebanon	390	79.6	79.6	2.3	12.3	5.5	0.2	83.9	77.1
Norway	833	80.7	80.7	9.7	5.4	4.1	0.0	81.5	80.3
Portugal	1378	44.2	44.2	27.2	15.9	12.7	0.1	46.4	41.9
Russian Federation	2522	69.5	69.5	11.4	6.0	13.0	0.2	68.9	70.1
Russian Federation 6hr+	1142	78.8	78.8	6.4	4.3	10.3	0.2	77.0	80.3
Slovenia	985	70.8	70.8	10.9	11.0	7.1	0.3	70.1	71.8
Sweden	1306	68.6	68.6	12.3	8.8	10.1	0.1	72.3	66.2
United States	999	79.1	79.1	5.5	12.9	2.1	0.4	79.6	78.6
International Avg (n=9)	10828	72.6	72.6	9.8	10.0	7.3	0.2	73.8	71.9

DIFF = Percent correct
Because of missing gender information, some totals may appear inconsistent.

M8_06B (MA33118B): Calculus / Knowing Type: MC Key: C
 Label: f is continuous at x=2

COUNTRY	N	DIFF %	A %	B %	C %	OMITTED %	NOT REACHED %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1313	41.2	7.1	48.8	41.2	2.8	0.2	39.4	42.7
Italy	1102	50.7	8.6	31.1	50.7	9.2	0.4	54.6	48.3
Lebanon	390	49.1	9.4	35.2	49.1	6.1	0.2	50.9	48.0
Norway	833	32.9	15.2	46.9	32.9	5.0	0.0	33.3	32.6
Portugal	1378	30.4	28.3	28.3	30.4	13.0	0.1	28.4	32.5
Russian Federation	2522	23.5	18.8	44.0	23.5	13.5	0.2	22.3	24.8
Russian Federation 6hr+	1142	27.3	13.9	48.2	27.3	10.5	0.2	24.6	29.5
Slovenia	985	21.9	14.7	55.4	21.9	7.8	0.3	20.6	23.7
Sweden	1306	25.5	18.3	45.5	25.5	10.5	0.1	28.2	23.7
United States	999	49.8	11.3	36.4	49.8	2.2	0.4	44.6	55.0
International Avg (n=9)	10828	36.1	14.6	41.3	36.1	7.8	0.2	35.8	36.8

DIFF = Percent correct
 Because of missing gender information, some totals may appear inconsistent.

M8_06C (MA33118C): Calculus / Knowing Type: MC Key: B
 Label: f is differentiable x=3

COUNTRY	N	DIFF %	A %	B %	C %	OMITTED %	NOT REACHED %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1313	56.4	9.5	56.4	31.1	2.7	0.2	50.2	61.7
Italy	1102	61.7	8.2	61.7	20.3	9.4	0.4	65.1	59.7
Lebanon	390	64.3	5.8	64.3	23.8	5.9	0.2	63.3	64.8
Norway	833	62.7	12.7	62.7	20.3	4.4	0.0	64.8	61.3
Portugal	1378	35.2	22.9	35.2	29.2	12.7	0.1	36.8	33.6
Russian Federation	2522	46.8	18.2	46.8	21.0	13.8	0.2	45.8	47.8
Russian Federation 6hr+	1142	55.0	18.0	55.0	15.7	11.1	0.2	51.8	57.6
Slovenia	985	48.4	13.0	48.4	30.9	7.4	0.3	45.9	51.9
Sweden	1306	49.1	18.1	49.1	24.3	8.3	0.1	53.4	46.4
United States	999	64.3	10.4	64.3	22.7	2.2	0.4	62.7	65.9
International Avg (n=9)	10828	54.3	13.2	54.3	24.9	7.4	0.2	54.2	54.8

DIFF = Percent correct
 Because of missing gender information, some totals may appear inconsistent.

M8_07 (MA33243): Calculus / Applying Type: CR 2 Points
Label: Number of toy cars to maximize profit

COUNTRY	N	20 %	21 %	10 %	79 %	OMITTED %	NOT REACHED %	V1 %	V2 %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1313	12.6	6.6	3.3	52.8	24.6	0.2	22.4	19.1	14.8	22.9
Italy	1099	8.4	2.0	2.8	18.3	68.1	0.4	13.2	10.4	9.8	10.8
Lebanon	390	10.8	8.8	1.5	38.0	40.1	0.8	21.1	19.5	21.3	18.5
Norway	833	7.5	18.6	3.7	31.8	38.2	0.2	29.9	26.1	22.6	28.4
Portugal	1378	20.2	4.1	4.9	35.3	35.3	0.3	29.2	24.3	23.8	24.9
Russian Federation	2522	9.3	6.2	2.0	24.7	57.6	0.2	17.5	15.5	14.0	16.9
Russian Federation 6hr+	1142	18.1	10.4	3.3	25.4	42.4	0.4	31.8	28.5	23.8	32.4
Slovenia	984	7.6	3.2	2.2	44.0	42.5	0.4	13.0	10.8	7.6	15.4
Sweden	1306	10.4	12.2	3.6	37.0	36.6	0.3	26.2	22.6	24.8	21.2
United States	999	6.1	13.3	3.6	61.4	15.1	0.4	23.1	19.5	16.1	22.8
International Avg (n=9)	10824	10.3	8.3	3.1	38.2	39.8	0.4	21.7	18.7	17.2	20.2

V1 = Percent scoring 1 pt or better; V2 = Percent scoring 2 pts; Percent right for boys and girls corresponds to percent obtaining full credit.
Because of missing gender information, some totals may appear inconsistent.

M8_08 (MA33229): Calculus / Reasoning Type: CR 1 Point
Label: Find trig antiderivative given formula

COUNTRY	N	10 %	70 %	79 %	OMITTED %	NOT REACHED %	V1 %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1313	9.1	0.0	49.9	40.6	0.4	9.1	6.1	11.7
Italy	1100	12.4	0.0	29.9	57.3	0.4	12.4	13.3	11.8
Lebanon	390	35.9	0.2	43.5	19.3	1.1	35.9	37.8	34.7
Norway	833	5.6	0.1	53.8	40.2	0.3	5.6	5.4	5.7
Portugal	1378	0.1	0.0	19.8	79.8	0.4	0.1	0.0	0.2
Russian Federation	2522	11.0	0.0	15.1	73.6	0.3	11.0	8.6	13.4
Russian Federation 6hr+	1142	18.3	0.0	22.4	59.0	0.4	18.3	13.5	22.2
Slovenia	984	5.7	0.0	62.4	31.4	0.4	5.7	3.9	8.3
Sweden	1306	5.2	0.1	42.1	52.0	0.6	5.2	4.1	5.9
United States	999	11.6	0.3	69.8	18.0	0.4	11.6	6.2	17.0
International Avg (n=9)	10825	10.7	0.1	42.9	45.8	0.5	10.7	9.5	12.1

V1 = Percent scoring 1 pt or better; V2 = Percent scoring 2 pts; Percent right for boys and girls corresponds to percent obtaining full credit.
Because of missing gender information, some totals may appear inconsistent.

M8_09 (MA33011): Geometry / Applying Type: MC Key: A
 Label: Find vector perpendicular to given vector

COUNTRY	N	DIFF %	A %	B %	C %	D %	OMITTED %	NOT REACHED %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1313	49.7	49.7	17.7	17.4	12.3	2.5	0.5	43.2	55.3
Italy	1102	26.3	26.3	29.7	20.0	11.2	12.4	0.4	20.1	30.1
Lebanon	389	76.0	76.0	10.0	4.9	4.3	3.5	1.3	76.2	75.8
Norway	833	53.7	53.7	18.4	16.1	8.3	3.2	0.3	48.2	57.1
Portugal	1378	39.5	39.5	24.1	23.8	8.6	3.4	0.6	33.9	45.1
Russian Federation	2522	41.0	41.0	26.1	18.2	10.4	4.0	0.3	35.8	46.1
Russian Federation 6hr+	1142	55.0	55.0	18.2	13.9	9.5	3.0	0.4	46.7	61.9
Slovenia	985	38.7	38.7	24.0	22.8	7.8	6.3	0.4	32.9	47.0
Sweden	1306	26.8	26.8	33.1	25.9	8.8	4.5	0.9	25.0	28.0
United States	999	21.1	21.1	42.0	21.7	10.6	4.2	0.4	14.0	28.2
International Avg (n=9)	10827	41.4	41.4	25.0	19.0	9.1	4.9	0.6	36.6	45.9

DIFF = Percent correct
 Because of missing gender information, some totals may appear inconsistent.

M8_10 (MA33159): Geometry / Applying Type: CR 1 Point
 Label: Find triangle side lengths given one special angle

COUNTRY	N	10 %	70 %	79 %	OMITTED %	NOT REACHED %	V1 %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1313	12.2	0.2	44.6	42.3	0.7	12.2	10.9	13.4
Italy	1100	24.8	0.8	41.3	32.6	0.5	24.8	30.9	21.1
Lebanon	390	54.8	0.9	29.3	13.8	1.3	54.8	59.3	52.1
Norway	833	26.7	0.4	48.9	23.7	0.3	26.7	29.4	24.9
Portugal	1378	26.7	1.0	57.8	13.7	0.7	26.7	26.6	26.9
Russian Federation	2521	58.0	1.6	22.1	18.0	0.3	58.0	57.8	58.1
Russian Federation 6hr+	1141	67.5	1.4	18.0	12.8	0.4	67.5	64.8	69.7
Slovenia	984	31.5	0.6	58.2	9.2	0.5	31.5	31.1	32.1
Sweden	1306	19.9	0.5	53.7	24.9	1.1	19.9	19.4	20.1
United States	999	22.5	0.7	70.6	5.6	0.6	22.5	16.9	28.2
International Avg (n=9)	10824	30.8	0.7	47.4	20.4	0.7	30.8	31.4	30.8

V1 = Percent scoring 1 pt or better; V2 = Percent scoring 2 pts; Percent right for boys and girls corresponds to percent obtaining full credit.
 Because of missing gender information, some totals may appear inconsistent.

M8_11 (MA33054): Geometry / Applying Type: MC Key: D
Label: Rhombus diagonal length in terms of side length

COUNTRY	N	DIFF %	A %	B %	C %	D %	OMITTED %	NOT REACHED %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1313	24.0	3.3	26.4	31.8	24.0	13.4	1.1	19.6	27.8
Italy	1102	27.9	3.8	27.4	24.8	27.9	15.2	0.8	24.3	30.1
Lebanon	390	46.5	4.5	20.1	16.0	46.5	11.4	1.5	43.8	48.0
Norway	833	28.9	2.7	24.6	33.2	28.9	9.6	1.1	18.9	35.3
Portugal	1378	23.3	3.2	21.1	37.1	23.3	14.3	1.0	19.2	27.4
Russian Federation	2522	46.6	7.3	21.6	20.7	46.6	3.5	0.4	45.3	47.9
Russian Federation 6hr+	1142	59.6	5.7	17.8	13.0	59.6	3.3	0.5	56.1	62.5
Slovenia	985	32.7	1.6	33.9	25.7	32.7	5.6	0.5	28.7	38.3
Sweden	1306	27.0	4.2	24.6	34.1	27.0	8.5	1.7	23.8	29.0
United States	999	29.9	3.7	26.9	31.1	29.9	7.7	0.6	24.4	35.5
International Avg (n=9)	10828	31.9	3.8	25.2	28.3	31.9	9.9	1.0	27.6	35.5

DIFF = Percent correct
Because of missing gender information, some totals may appear inconsistent.

M9_01 (MA33085): Algebra / Knowing Type: MC Key: D
Label: Identify equation of increasing function

COUNTRY	N	DIFF %	A %	B %	C %	D %	OMITTED %	NOT REACHED %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1322	64.9	19.0	4.1	4.8	64.9	5.3	1.8	61.3	67.9
Italy	1103	45.7	39.6	3.5	7.2	45.7	2.8	1.3	46.1	45.4
Lebanon	390	62.6	23.8	4.2	3.4	62.6	3.4	2.7	60.8	63.4
Norway	843	44.4	37.9	3.5	9.8	44.4	3.6	0.8	41.8	46.0
Portugal	1374	64.7	14.2	6.4	11.2	64.7	1.7	1.8	64.2	65.1
Russian Federation	2522	51.1	30.0	4.3	11.4	51.1	2.5	0.7	51.0	51.2
Russian Federation 6hr+	1142	61.5	20.9	3.9	10.7	61.5	2.5	0.5	59.6	63.1
Slovenia	982	46.2	32.0	6.0	14.1	46.2	1.5	0.2	39.6	55.4
Sweden	1297	50.6	28.8	4.1	11.4	50.6	3.4	1.7	46.8	53.4
United States	987	51.9	32.5	1.6	12.0	51.9	1.8	0.1	42.7	61.5
International Avg (n=9)	10820	53.6	28.7	4.2	9.5	53.6	2.9	1.2	50.5	56.6

DIFF = Percent correct
Because of missing gender information, some totals may appear inconsistent.

M9_02 (MA33190): Algebra / Knowing Type: CR 1 Point
 Label: Possible values for compound exponent expression

COUNTRY	N	10 %	79 %	OMITTED %	NOT REACHED %	V1 %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1322	65.7	24.5	7.8	2.1	65.7	65.2	66.0
Italy	1103	49.1	33.3	16.4	1.3	49.1	46.8	50.5
Lebanon	391	54.3	31.2	11.1	3.4	54.3	57.1	52.9
Norway	843	58.3	30.8	9.9	1.0	58.3	53.9	61.0
Portugal	1374	60.2	27.7	9.9	2.2	60.2	61.4	59.0
Russian Federation	2522	50.1	37.4	11.7	0.7	50.1	48.3	51.9
Russian Federation 6hr+	1142	61.3	30.1	7.9	0.7	61.3	58.5	63.6
Slovenia	982	66.7	26.5	6.4	0.4	66.7	66.5	67.1
Sweden	1297	55.1	30.6	11.7	2.5	55.1	54.5	55.6
United States	987	71.4	26.2	2.4	0.1	71.4	68.7	74.2
International Avg (n=9)	10821	59.0	29.8	9.7	1.5	59.0	58.0	59.8

V1 = Percent scoring 1 pt or better; V2 = Percent scoring 2 pts; Percent right for boys and girls corresponds to percent obtaining full credit.
 Because of missing gender information, some totals may appear inconsistent.

M9_03 (MA33115): Algebra / Applying Type: MC Key: C
 Label: Values of linear term when parabola is above axis

COUNTRY	N	DIFF %	A %	B %	C %	D %	OMITTED %	NOT REACHED %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1322	37.6	9.4	21.2	37.6	11.7	17.3	2.8	36.1	38.9
Italy	1103	24.1	13.1	28.0	24.1	19.5	14.0	1.3	20.9	26.1
Lebanon	391	28.5	13.2	16.1	28.5	20.6	16.9	4.8	26.5	29.5
Norway	843	42.2	14.2	19.2	42.2	13.3	9.8	1.3	40.2	43.5
Portugal	1374	53.3	13.0	14.0	53.3	11.5	5.6	2.7	53.1	53.5
Russian Federation	2522	43.3	8.7	27.2	43.3	16.3	3.6	0.8	40.9	45.7
Russian Federation 6hr+	1142	51.7	4.9	21.0	51.7	17.9	3.7	0.8	51.8	51.6
Slovenia	982	23.3	10.5	33.1	23.3	24.4	8.0	0.7	21.4	25.9
Sweden	1297	35.8	13.0	26.2	35.8	13.7	7.7	3.5	36.0	35.7
United States	987	57.6	13.9	15.9	57.6	9.1	3.5	0.1	56.9	58.2
International Avg (n=9)	10821	38.4	12.1	22.3	38.4	15.6	9.6	2.0	36.9	39.7

DIFF = Percent correct
 Because of missing gender information, some totals may appear inconsistent.

M9_04 (MA33237): Algebra / Reasoning Type: CR 1 Point
 Label: Find constant given solutions of function

COUNTRY	N	10 %	79 %	OMITTED %	NOT REACHED %	V1 %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1322	36.5	30.0	29.6	3.9	36.5	33.9	38.7
Italy	1103	19.3	30.2	48.8	1.7	19.3	18.1	20.0
Lebanon	391	63.0	21.3	10.8	4.9	63.0	58.2	65.4
Norway	843	27.7	35.4	35.5	1.4	27.7	25.9	28.8
Portugal	1374	30.8	31.3	34.3	3.5	30.8	32.6	29.0
Russian Federation	2522	49.3	21.6	28.2	0.9	49.3	49.3	49.2
Russian Federation 6hr+	1142	63.2	19.8	16.0	1.1	63.2	60.9	65.0
Slovenia	982	27.8	48.6	22.7	0.9	27.8	25.6	31.0
Sweden	1297	31.6	34.6	29.1	4.7	31.6	27.8	34.4
United States	987	41.2	44.5	14.0	0.2	41.2	37.4	45.2
International Avg (n=9)	10821	36.4	33.1	28.1	2.5	36.4	34.3	38.0

V1 = Percent scoring 1 pt or better; V2 = Percent scoring 2 pts; Percent right for boys and girls corresponds to percent obtaining full credit.
 Because of missing gender information, some totals may appear inconsistent.

M9_05 (MA33077): Calculus / Knowing Type: MC Key: A
Label: Piecewise graph - discontinuous/not differentiable

COUNTRY	N	DIFF %	A %	B %	C %	D %	OMITTED %	NOT REACHED %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1322	49.5	49.5	10.0	16.5	16.8	3.1	4.1	50.6	48.7
Italy	1103	45.4	45.4	12.0	14.5	19.2	7.1	1.7	43.8	46.3
Lebanon	391	43.3	43.3	11.2	8.0	27.6	4.7	5.2	43.5	43.2
Norway	843	40.4	40.4	16.1	16.2	20.1	5.8	1.4	32.0	45.5
Portugal	1374	39.5	39.5	5.4	10.8	35.5	4.7	4.1	39.2	39.8
Russian Federation	2522	48.1	48.1	5.7	9.8	29.6	5.6	1.2	47.9	48.2
Russian Federation 6hr+	1142	60.4	60.4	3.4	5.3	26.1	3.6	1.3	57.7	62.6
Slovenia	982	40.0	40.0	9.1	15.8	30.6	3.5	0.9	38.8	41.7
Sweden	1297	34.9	34.9	16.8	19.8	17.5	5.3	5.7	38.1	32.6
United States	987	61.7	61.7	7.0	14.0	16.1	0.8	0.3	58.2	65.4
International Avg (n=9)	10821	44.8	44.8	10.4	13.9	23.7	4.5	2.7	43.6	45.7

DIFF = Percent correct
Because of missing gender information, some totals may appear inconsistent.

M9_06 (MA33132): Calculus / Applying Type: MC Key: A
Label: Derivative graph of piecewise function graph

COUNTRY	N	DIFF %	A %	B %	C %	D %	OMITTED %	NOT REACHED %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1322	53.6	53.6	14.4	4.7	18.6	4.4	4.4	53.4	53.7
Italy	1103	38.7	38.7	23.1	7.1	17.3	11.9	1.8	36.9	39.8
Lebanon	391	54.2	54.2	11.0	4.3	18.6	6.5	5.4	57.0	52.7
Norway	843	45.5	45.5	15.1	6.3	25.7	5.9	1.4	36.6	51.0
Portugal	1374	54.9	54.9	11.4	4.7	21.2	3.5	4.4	54.5	55.2
Russian Federation	2522	49.8	49.8	12.8	6.6	22.8	6.5	1.4	51.9	47.8
Russian Federation 6hr+	1142	57.4	57.4	10.3	4.0	22.8	4.2	1.3	56.6	58.1
Slovenia	982	31.7	31.7	20.7	12.7	26.5	7.4	1.0	29.6	34.6
Sweden	1295	39.0	39.0	14.7	6.5	28.7	5.0	6.1	34.4	42.4
United States	987	54.5	54.5	10.0	7.8	26.2	1.1	0.4	52.1	57.1
International Avg (n=9)	10819	46.9	46.9	14.8	6.7	22.8	5.8	2.9	45.2	48.3

DIFF = Percent correct
Because of missing gender information, some totals may appear inconsistent.

M9_07 (MA33218): Calculus / Applying Type: CR 2 Points
Label: Find line parallel to cubic tangent given points

COUNTRY	N	20 %	10 %	11 %	79 %	OMITTED %	NOT REACHED %	V1 %	V2 %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1322	9.8	7.7	0.1	21.1	56.2	5.0	17.7	9.8	7.1	11.9
Italy	1102	12.9	2.8	0.5	23.8	57.5	2.5	16.2	12.9	14.0	12.2
Lebanon	391	50.4	12.5	1.9	13.3	16.2	5.6	64.8	50.4	54.3	48.4
Norway	843	12.8	4.1	0.3	20.6	60.7	1.6	17.2	12.8	11.7	13.4
Portugal	1374	29.0	5.2	0.6	29.3	30.4	5.6	34.7	29.0	32.9	24.8
Russian Federation	2522	13.5	2.7	0.1	17.5	64.6	1.6	16.2	13.5	13.6	13.3
Russian Federation 6hr+	1142	23.9	1.7	0.3	22.5	49.8	1.8	25.9	23.9	21.8	25.6
Slovenia	982	31.1	6.2	0.8	37.7	22.7	1.6	38.1	31.1	28.6	34.5
Sweden	1297	17.5	5.1	0.3	23.9	46.4	6.7	22.9	17.5	16.1	18.5
United States	987	29.2	4.8	4.9	44.6	16.1	0.4	39.0	29.2	22.3	36.4
International Avg (n=9)	10820	22.9	5.7	1.1	25.8	41.2	3.4	29.6	22.9	22.3	23.7

V1 = Percent scoring 1 pt or better; V2 = Percent scoring 2 pts; Percent right for boys and girls corresponds to percent obtaining full credit.
Because of missing gender information, some totals may appear inconsistent.

M9_08 (MA33236): Calculus / Reasoning Type: CR 2 Points
Label: Given derivative, describe f (DERIVED)

COUNTRY	N	20 %	10 %	70 %	79 %	OMITTED %	NOT REACHED %	V1 %	V2 %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1322	27.8	16.4	14.1	33.4	2.3	6.0	44.2	27.8	22.8	32.0
Italy	1103	9.2	8.0	22.3	49.5	8.1	2.9	17.3	9.2	8.3	9.8
Lebanon	391	23.6	16.4	20.1	29.9	3.7	6.3	40.0	23.6	25.0	22.9
Norway	843	12.9	15.0	23.9	44.3	1.6	2.2	27.9	12.9	7.3	16.3
Portugal	1374	25.7	15.0	16.3	31.1	4.7	7.3	40.7	25.7	26.3	25.0
Russian Federation	2522	23.7	13.0	14.3	38.6	8.5	1.8	36.7	23.7	21.1	26.3
Russian Federation 6hr+	1142	34.4	19.3	13.2	25.1	6.1	2.0	53.6	34.4	33.4	35.1
Slovenia	981	6.9	11.3	20.4	53.6	5.9	1.9	18.2	6.9	4.6	10.1
Sweden	1294	12.1	13.8	20.9	40.8	5.0	7.4	25.9	12.1	10.8	13.0
United States	987	25.7	18.6	21.7	31.9	1.7	0.4	44.3	25.7	20.3	31.2
International Avg (n=9)	10817	18.6	14.2	19.3	39.2	4.6	4.0	32.8	18.6	16.3	20.7

V1 = Percent scoring 1 pt or better; V2 = Percent scoring 2 pts; Percent right for boys and girls corresponds to percent obtaining full credit.
Because of missing gender information, some totals may appear inconsistent.

M9_08A (MA33236A): Calculus / Reasoning Type: MC Key: C
Label: The graph of f passes through (0,1)

COUNTRY	N	DIFF %	A %	B %	C %	OMITTED %	NOT REACHED %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1322	49.9	27.8	12.9	49.9	3.4	6.0	45.6	53.4
Italy	1103	26.0	34.9	23.4	26.0	12.8	2.9	22.5	28.1
Lebanon	391	53.4	21.6	13.0	53.4	5.7	6.3	50.6	54.8
Norway	843	38.6	29.9	24.9	38.6	4.4	2.2	30.1	43.8
Portugal	1374	42.9	31.5	12.9	42.9	5.4	7.3	44.2	41.6
Russian Federation	2522	37.1	31.9	19.7	37.1	9.4	1.8	34.3	39.9
Russian Federation 6hr+	1142	51.4	27.5	12.0	51.4	7.1	2.0	48.7	53.6
Slovenia	982	23.1	43.6	24.7	23.1	6.7	1.9	18.5	29.6
Sweden	1294	33.3	30.2	21.4	33.3	7.7	7.4	27.7	37.3
United States	987	45.1	37.0	15.1	45.1	2.4	0.4	37.8	52.6
International Avg (n=9)	10818	38.8	32.0	18.7	38.8	6.4	4.0	34.6	42.4

DIFF = Percent correct
Because of missing gender information, some totals may appear inconsistent.

M9_08B (MA33236B): Calculus / Reasoning Type: MC Key: B
Label: f decreases for all x

COUNTRY	N	DIFF %	A %	B %	C %	OMITTED %	NOT REACHED %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1322	54.2	21.5	54.2	15.1	3.2	6.0	50.1	57.6
Italy	1103	36.8	36.6	36.8	11.8	12.0	2.9	37.3	36.4
Lebanon	391	53.0	27.3	53.0	6.3	7.2	6.3	53.6	52.6
Norway	843	44.6	31.5	44.6	11.2	10.6	2.2	44.2	44.8
Portugal	1374	53.1	23.0	53.1	11.2	5.5	7.3	52.2	54.0
Russian Federation	2522	51.5	33.0	51.5	4.3	9.4	1.8	49.3	53.7
Russian Federation 6hr+	1142	66.2	22.6	66.2	2.4	6.8	2.0	66.1	66.3
Slovenia	982	37.6	43.4	37.6	10.4	6.7	1.9	35.1	41.0
Sweden	1294	43.2	32.5	43.2	10.2	6.7	7.4	40.2	45.3
United States	987	64.0	25.7	64.0	7.7	2.2	0.4	61.0	67.1
International Avg (n=9)	10818	48.7	30.5	48.7	9.8	7.0	4.0	47.0	50.3

DIFF = Percent correct
Because of missing gender information, some totals may appear inconsistent.

M9_08C (MA33236C): Calculus / Reasoning Type: MC Key: A
 Label: f increases for $x < 2$

COUNTRY	N	DIFF %	A %	B %	C %	OMITTED %	NOT REACHED %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1322	50.3	50.3	27.0	13.2	3.5	6.0	47.3	52.8
Italy	1103	33.4	33.4	40.9	11.0	11.8	2.9	33.2	33.6
Lebanon	391	48.8	48.8	31.5	7.0	6.4	6.3	45.8	50.3
Norway	843	37.0	37.0	49.3	5.7	5.8	2.2	34.9	38.3
Portugal	1374	48.6	48.6	32.6	5.9	5.7	7.3	49.1	48.1
Russian Federation	2522	46.1	46.1	35.4	6.6	10.0	1.8	46.4	45.8
Russian Federation 6hr+	1142	59.7	59.7	27.2	3.9	7.2	2.0	61.0	58.6
Slovenia	982	30.7	30.7	48.3	11.8	7.3	1.9	30.3	31.2
Sweden	1294	36.4	36.4	41.2	8.2	6.7	7.4	35.6	37.1
United States	987	51.0	51.0	36.4	9.8	2.4	0.4	47.8	54.4
International Avg (n=9)	10818	42.5	42.5	38.1	8.8	6.6	4.0	41.2	43.5

DIFF = Percent correct
 Because of missing gender information, some totals may appear inconsistent.

M9_08D (MA33236D): Calculus / Reasoning Type: MC Key: B
 Label: f has a minimum for x=2

COUNTRY	N	DIFF %	A %	B %	C %	OMITTED %	NOT REACHED %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1322	57.4	10.7	57.4	22.0	4.0	6.0	54.0	60.1
Italy	1103	43.2	17.3	43.2	23.6	13.0	2.9	41.7	44.1
Lebanon	391	47.4	27.6	47.4	11.9	6.9	6.3	44.7	48.7
Norway	843	54.3	19.9	54.3	16.0	7.6	2.2	51.3	56.1
Portugal	1374	55.3	17.4	55.3	14.6	5.4	7.3	54.7	55.9
Russian Federation	2522	50.2	24.6	50.2	12.8	10.5	1.8	49.2	51.3
Russian Federation 6hr+	1142	59.6	23.0	59.6	8.4	7.0	2.0	60.3	59.0
Slovenia	981	45.8	15.9	45.8	29.0	7.4	1.9	44.5	47.5
Sweden	1294	45.3	22.5	45.3	17.5	7.3	7.4	43.4	46.6
United States	987	63.4	23.3	63.4	10.6	2.3	0.4	58.2	68.8
International Avg (n=9)	10817	51.4	19.9	51.4	17.5	7.2	4.0	49.1	53.2

DIFF = Percent correct
 Because of missing gender information, some totals may appear inconsistent.

M9_09 (MA33181): Geometry / Knowing Type: MC Key: C
Label: Similar triangles ABC and DEF side length

COUNTRY	N	DIFF %	A %	B %	C %	D %	OMITTED %	NOT REACHED %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1322	43.5	4.0	24.8	43.5	16.4	4.8	6.5	36.3	49.5
Italy	1103	56.1	4.6	11.8	56.1	18.3	5.3	3.9	55.1	56.6
Lebanon	391	56.7	6.9	10.3	56.7	9.4	9.3	7.4	49.3	60.5
Norway	843	67.1	2.3	12.3	67.1	8.0	7.1	3.1	65.5	68.2
Portugal	1374	57.7	1.9	13.8	57.7	14.1	3.0	9.5	54.8	60.7
Russian Federation	2522	72.6	3.4	9.5	72.6	10.8	1.6	2.0	70.6	74.6
Russian Federation 6hr+	1142	86.5	0.6	5.5	86.5	4.2	1.2	2.0	84.4	88.2
Slovenia	982	59.5	3.5	11.3	59.5	18.3	4.4	3.0	54.1	67.0
Sweden	1295	53.2	2.5	13.3	53.2	16.5	5.9	8.6	46.9	57.7
United States	987	73.2	2.7	10.9	73.2	9.8	2.1	1.4	68.8	77.7
International Avg (n=9)	10819	60.0	3.5	13.1	60.0	13.5	4.9	5.0	55.7	63.6

DIFF = Percent correct
Because of missing gender information, some totals may appear inconsistent.

M9_10 (MA33002): Geometry / Applying Type: CR 1 Point
 Label: Given midpoint write coordinates of boundaries

COUNTRY	N	10 %	70 %	79 %	OMITTED %	NOT REACHED %	V1 %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1322	30.2	9.4	25.0	26.9	8.6	30.2	27.6	32.4
Italy	1103	26.6	9.1	23.2	36.3	4.8	26.6	32.0	23.4
Lebanon	391	69.7	8.0	7.3	6.3	8.7	69.7	72.6	68.2
Norway	843	25.6	10.2	33.7	22.5	8.0	25.6	25.2	25.8
Portugal	1374	25.7	11.5	27.2	25.0	10.6	25.7	28.5	22.7
Russian Federation	2522	42.7	10.6	23.7	20.4	2.6	42.7	42.1	43.2
Russian Federation 6hr+	1142	53.6	10.0	21.2	12.8	2.3	53.6	52.4	54.7
Slovenia	982	29.8	10.1	39.2	17.0	3.9	29.8	27.6	32.9
Sweden	1297	24.9	10.4	29.5	25.6	9.6	24.9	24.0	25.5
United States	987	42.4	11.2	36.3	8.4	1.6	42.4	38.1	46.8
International Avg (n=9)	10821	35.3	10.1	27.2	20.9	6.5	35.3	35.3	35.7

V1 = Percent scoring 1 pt or better; V2 = Percent scoring 2 pts; Percent right for boys and girls corresponds to percent obtaining full credit.
 Because of missing gender information, some totals may appear inconsistent.

M9_11 (MA33169): Geometry / Reasoning Type: MC Key: B
 Label: Find sinusoid temperature graph coefficients

COUNTRY	N	DIFF %	A %	B %	C %	D %	OMITTED %	NOT REACHED %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1322	39.2	9.9	39.2	19.7	7.4	11.2	12.5	38.0	40.2
Italy	1103	35.9	11.3	35.9	19.7	7.3	17.2	8.6	29.9	39.5
Lebanon	391	33.8	11.5	33.8	16.3	5.8	22.4	10.2	27.9	36.8
Norway	843	44.9	14.8	44.9	16.2	6.0	7.4	10.7	40.1	47.9
Portugal	1374	47.0	9.9	47.0	14.7	6.6	8.4	13.3	47.0	47.0
Russian Federation	2522	43.5	13.8	43.5	20.3	8.6	8.8	5.0	42.3	44.8
Russian Federation 6hr+	1142	46.4	13.4	46.4	17.8	8.8	8.6	4.9	45.2	47.5
Slovenia	982	35.0	17.0	35.0	23.6	7.7	10.4	6.3	34.4	35.9
Sweden	1296	39.6	15.4	39.6	18.7	9.1	5.8	11.5	37.7	41.0
United States	987	56.1	12.4	56.1	19.5	6.5	2.8	2.6	53.8	58.6
International Avg (n=9)	10820	41.7	12.9	41.7	18.8	7.2	10.5	9.0	39.0	43.5

DIFF = Percent correct
 Because of missing gender information, some totals may appear inconsistent.

M9_12 (MA33235): Geometry / Reasoning Type: CR 1 Point
 Label: Prove triangle property for ABC

COUNTRY	N	10 %	79 %	OMITTED %	NOT REACHED %	V1 %	GIRL PCT RIGHT	BOY PCT RIGHT
France	1322	5.8	23.2	55.0	16.0	5.8	6.1	5.5
Italy	1103	19.4	12.3	56.8	11.5	19.4	21.7	17.9
Lebanon	391	31.3	19.9	33.2	15.7	31.3	28.9	32.5
Norway	843	9.2	32.4	45.6	12.8	9.2	10.2	8.6
Portugal	1374	22.9	35.7	25.7	15.7	22.9	26.7	18.9
Russian Federation	2522	24.7	12.1	54.9	8.3	24.7	22.2	27.2
Russian Federation 6hr+	1142	42.1	12.5	36.6	8.7	42.1	40.0	43.8
Slovenia	982	16.2	36.6	36.8	10.3	16.2	15.9	16.6
Sweden	1297	12.5	25.2	48.5	13.8	12.5	12.5	12.5
United States	987	12.5	64.3	19.2	4.0	12.5	9.1	16.1
International Avg (n=9)	10821	17.2	29.1	41.7	12.0	17.2	17.0	17.3

V1 = Percent scoring 1 pt or better; V2 = Percent scoring 2 pts; Percent right for boys and girls corresponds to percent obtaining full credit.
 Because of missing gender information, some totals may appear inconsistent.