

Appendix E

Average Percent Correct in the Mathematics Content and Cognitive Domains

Appendix E.1: Average Percent Correct in the Mathematics Content and Cognitive Domains

Country	Overall Mathematics	Mathematics Content Domains			Mathematics Cognitive Domains		
		Number	Geometric Shapes and Measures	Data Display	Knowing	Applying	Reasoning
Armenia	40 (0.8)	44 (0.8)	37 (0.8)	36 (0.9)	48 (0.8)	38 (0.8)	29 (0.7)
Australia	54 (0.6)	48 (0.7)	58 (0.6)	64 (0.7)	58 (0.7)	55 (0.7)	44 (0.6)
Austria	52 (0.7)	47 (0.6)	53 (0.9)	64 (0.8)	56 (0.7)	51 (0.8)	43 (0.7)
Azerbaijan	44 (1.2)	46 (1.3)	41 (1.3)	40 (1.3)	51 (1.2)	42 (1.4)	32 (1.1)
Bahrain	37 (0.6)	34 (0.6)	37 (0.6)	48 (0.9)	43 (0.6)	36 (0.6)	28 (0.6)
Belgium (Flemish)	62 (0.5)	59 (0.6)	62 (0.5)	69 (0.7)	69 (0.5)	62 (0.6)	46 (0.6)
Chile	41 (0.5)	37 (0.5)	42 (0.6)	53 (0.7)	45 (0.5)	41 (0.5)	33 (0.5)
Chinese Taipei	71 (0.4)	71 (0.4)	65 (0.5)	82 (0.5)	75 (0.4)	72 (0.4)	59 (0.6)
Croatia	48 (0.4)	45 (0.4)	48 (0.5)	58 (0.6)	55 (0.5)	46 (0.5)	38 (0.5)
Czech Republic	52 (0.6)	48 (0.6)	53 (0.7)	65 (0.8)	55 (0.6)	53 (0.7)	46 (0.8)
Denmark	58 (0.6)	54 (0.7)	61 (0.6)	68 (0.7)	61 (0.6)	60 (0.7)	50 (0.7)
England	60 (0.8)	56 (0.9)	62 (0.8)	71 (0.8)	66 (0.8)	61 (0.9)	49 (0.8)
Finland	60 (0.6)	57 (0.6)	59 (0.6)	73 (0.7)	63 (0.6)	60 (0.7)	52 (0.7)
Georgia	40 (0.6)	41 (0.6)	36 (0.6)	46 (0.9)	45 (0.7)	39 (0.6)	30 (0.6)
Germany	57 (0.6)	51 (0.6)	59 (0.6)	72 (0.7)	60 (0.6)	58 (0.6)	48 (0.7)
Hong Kong SAR	74 (0.8)	73 (0.8)	74 (0.7)	81 (0.8)	80 (0.7)	75 (0.9)	61 (0.8)
Hungary	55 (0.7)	51 (0.8)	56 (0.8)	63 (0.9)	60 (0.8)	54 (0.8)	45 (0.8)
Iran, Islamic Rep. of	37 (0.7)	34 (0.6)	40 (0.7)	39 (0.8)	43 (0.7)	36 (0.7)	26 (0.6)
Ireland	56 (0.6)	54 (0.7)	56 (0.6)	67 (0.8)	63 (0.6)	57 (0.7)	42 (0.8)
Italy	52 (0.7)	49 (0.7)	53 (0.7)	59 (0.8)	58 (0.7)	52 (0.8)	41 (0.7)
Japan	70 (0.4)	67 (0.4)	68 (0.4)	82 (0.4)	74 (0.4)	70 (0.4)	63 (0.5)
Kazakhstan	52 (1.1)	52 (1.1)	50 (1.1)	56 (1.3)	57 (1.0)	51 (1.2)	41 (1.1)
Korea, Rep. of	74 (0.4)	73 (0.4)	72 (0.4)	84 (0.4)	79 (0.4)	74 (0.4)	65 (0.5)
* Kuwait	23 (0.4)	20 (0.4)	25 (0.4)	30 (0.6)	29 (0.5)	22 (0.4)	16 (0.3)
Lithuania	58 (0.6)	56 (0.7)	58 (0.6)	68 (0.6)	61 (0.6)	60 (0.6)	49 (0.7)
Malta	49 (0.3)	46 (0.3)	49 (0.4)	61 (0.5)	56 (0.4)	50 (0.4)	35 (0.4)
* Morocco	24 (0.6)	21 (0.6)	28 (0.6)	21 (0.6)	28 (0.6)	22 (0.7)	18 (0.5)
Netherlands	59 (0.4)	57 (0.5)	54 (0.5)	74 (0.6)	61 (0.4)	60 (0.5)	51 (0.6)
New Zealand	46 (0.5)	42 (0.6)	47 (0.5)	59 (0.7)	49 (0.6)	47 (0.6)	39 (0.5)
Northern Ireland	65 (0.6)	63 (0.7)	65 (0.6)	73 (0.6)	71 (0.7)	66 (0.7)	49 (0.7)
Norway	48 (0.7)	43 (0.7)	52 (0.8)	60 (0.7)	51 (0.6)	50 (0.8)	41 (0.7)
Ψ Oman	30 (0.4)	27 (0.4)	31 (0.4)	36 (0.6)	35 (0.4)	28 (0.5)	21 (0.4)
Poland	45 (0.5)	42 (0.5)	45 (0.5)	58 (0.6)	49 (0.6)	45 (0.5)	38 (0.5)
Portugal	59 (0.8)	53 (0.9)	61 (0.7)	72 (0.7)	63 (0.7)	60 (0.9)	48 (0.9)
Qatar	34 (0.6)	32 (0.6)	34 (0.7)	43 (0.7)	39 (0.7)	33 (0.6)	26 (0.6)
Romania	47 (1.2)	47 (1.2)	46 (1.1)	52 (1.3)	53 (1.2)	47 (1.2)	39 (1.1)
Russian Federation	61 (0.9)	59 (0.9)	60 (0.9)	68 (0.9)	65 (0.8)	60 (1.0)	51 (0.9)
Saudi Arabia	33 (0.9)	30 (1.0)	34 (0.9)	39 (1.1)	39 (1.0)	31 (1.0)	24 (0.9)
Serbia	54 (0.7)	54 (0.7)	50 (0.7)	61 (0.9)	60 (0.7)	53 (0.8)	45 (0.7)
Singapore	74 (0.7)	76 (0.8)	70 (0.7)	80 (0.6)	81 (0.6)	75 (0.7)	61 (0.9)
Slovak Republic	52 (0.8)	50 (0.9)	50 (0.8)	62 (0.8)	56 (0.8)	52 (0.9)	43 (0.9)
Slovenia	53 (0.5)	47 (0.6)	57 (0.5)	68 (0.6)	57 (0.5)	54 (0.5)	44 (0.7)
Spain	45 (0.6)	43 (0.7)	44 (0.7)	56 (0.7)	50 (0.7)	45 (0.7)	35 (0.6)
Sweden	50 (0.5)	45 (0.6)	49 (0.5)	67 (0.7)	50 (0.5)	51 (0.5)	45 (0.6)
Thailand	41 (1.0)	38 (1.0)	39 (0.9)	53 (1.3)	45 (1.1)	40 (1.1)	32 (0.9)
Ψ Tunisia	25 (0.5)	25 (0.5)	25 (0.5)	23 (0.8)	31 (0.6)	23 (0.5)	16 (0.4)
Turkey	45 (0.8)	43 (0.9)	43 (0.8)	57 (0.9)	51 (0.9)	45 (0.9)	33 (0.7)
United Arab Emirates	37 (0.4)	35 (0.4)	37 (0.4)	46 (0.4)	43 (0.4)	36 (0.4)	28 (0.4)
United States	60 (0.5)	57 (0.5)	59 (0.5)	71 (0.4)	67 (0.5)	60 (0.5)	46 (0.5)
* Yemen	16 (0.4)	16 (0.5)	16 (0.5)	16 (0.6)	19 (0.6)	15 (0.5)	11 (0.3)
International Avg.	50 (0.1)	47 (0.1)	49 (0.1)	58 (0.1)	55 (0.1)	50 (0.1)	40 (0.1)

* Average achievement not reliably measured because the percentage of students with achievement too low for estimation exceeds 25%.

Ψ Reservations about reliability of average achievement because the percentage of students with achievement too low for estimation does not exceed 25% but exceeds 15%.

() Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

Appendix E.1: Average Percent Correct in the Mathematics Content and Cognitive Domains (Continued)

Country	Overall Mathematics	Mathematics Content Domains			Mathematics Cognitive Domains		
		Number	Geometric Shapes and Measures	Data Display	Knowing	Applying	Reasoning
Sixth Grade Participants							
Botswana	35 (0.7)	32 (0.7)	35 (0.7)	45 (0.9)	41 (0.8)	34 (0.8)	22 (0.6)
Ψ Honduras	29 (0.9)	28 (1.0)	27 (0.8)	35 (1.3)	32 (1.0)	29 (1.0)	23 (0.8)
⌘ Yemen	24 (0.6)	23 (0.6)	22 (0.5)	29 (0.9)	27 (0.7)	23 (0.7)	18 (0.5)
Benchmarking Participants							
Alberta, Canada	51 (0.6)	46 (0.7)	50 (0.6)	67 (0.7)	53 (0.7)	52 (0.7)	43 (0.7)
Ontario, Canada	54 (0.8)	47 (0.8)	59 (0.8)	69 (0.8)	57 (0.7)	56 (0.8)	46 (0.9)
Quebec, Canada	58 (0.6)	54 (0.7)	58 (0.6)	70 (0.7)	63 (0.6)	57 (0.7)	48 (0.9)
Abu Dhabi, UAE	34 (0.8)	32 (0.8)	34 (0.9)	42 (0.9)	40 (1.0)	33 (0.9)	25 (0.8)
Dubai, UAE	44 (0.4)	42 (0.4)	42 (0.4)	54 (0.5)	50 (0.4)	43 (0.4)	34 (0.4)
Florida, US	61 (0.7)	59 (0.8)	62 (0.8)	71 (0.6)	70 (0.7)	61 (0.8)	45 (0.9)
North Carolina, US	63 (1.0)	63 (0.9)	59 (1.3)	74 (1.1)	71 (1.1)	64 (1.0)	47 (1.2)

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS 2011

Appendix E.2: Average Percent Correct in the Mathematics Content and Cognitive Domains

Country	Overall Mathematics	Mathematics Content Domains				Mathematics Cognitive Domains		
		Number	Algebra	Geometry	Data and Chance	Knowing	Applying	Reasoning
Armenia	38 (0.6)	43 (0.6)	41 (0.6)	35 (0.7)	31 (0.6)	50 (0.7)	36 (0.6)	26 (0.5)
Australia	48 (1.3)	52 (1.4)	38 (1.4)	45 (1.3)	59 (1.2)	57 (1.3)	47 (1.3)	36 (1.3)
Ψ Bahrain	29 (0.3)	29 (0.3)	27 (0.4)	27 (0.4)	36 (0.4)	37 (0.4)	27 (0.3)	21 (0.4)
Chile	29 (0.4)	30 (0.5)	22 (0.4)	28 (0.5)	37 (0.5)	34 (0.5)	29 (0.4)	20 (0.4)
Chinese Taipei	72 (0.6)	72 (0.6)	72 (0.7)	73 (0.6)	69 (0.6)	77 (0.6)	72 (0.6)	63 (0.7)
England	48 (1.4)	53 (1.6)	39 (1.4)	45 (1.4)	61 (1.4)	57 (1.4)	48 (1.5)	37 (1.6)
Finland	49 (0.7)	56 (0.7)	39 (0.7)	45 (0.7)	61 (0.7)	58 (0.6)	50 (0.7)	37 (0.7)
Georgia	33 (0.6)	35 (0.7)	33 (0.7)	30 (0.7)	34 (0.6)	43 (0.8)	31 (0.6)	22 (0.6)
⌘ Ghana	19 (0.4)	18 (0.5)	18 (0.5)	17 (0.5)	21 (0.4)	25 (0.6)	17 (0.4)	12 (0.4)
Hong Kong SAR	68 (0.9)	72 (0.9)	64 (1.0)	69 (0.9)	68 (0.8)	77 (0.8)	67 (0.9)	56 (1.0)
Hungary	49 (0.8)	53 (0.9)	42 (0.8)	47 (0.9)	56 (0.7)	59 (0.9)	47 (0.8)	36 (0.8)
Ψ Indonesia	24 (0.6)	24 (0.7)	22 (0.5)	24 (0.6)	29 (0.7)	31 (0.7)	23 (0.6)	17 (0.4)
Ψ Iran, Islamic Rep. of	30 (0.8)	29 (0.8)	27 (0.8)	33 (0.9)	32 (0.7)	37 (0.9)	28 (0.8)	23 (0.7)
Israel	51 (1.0)	55 (1.0)	48 (1.1)	45 (1.0)	56 (0.9)	60 (1.0)	50 (1.0)	40 (1.0)
Italy	46 (0.6)	49 (0.7)	39 (0.6)	48 (0.7)	52 (0.6)	55 (0.7)	45 (0.6)	34 (0.6)
Japan	64 (0.6)	63 (0.7)	60 (0.7)	67 (0.7)	68 (0.6)	70 (0.6)	64 (0.6)	56 (0.7)
Ψ Jordan	29 (0.5)	27 (0.6)	29 (0.6)	28 (0.6)	31 (0.6)	37 (0.7)	26 (0.5)	21 (0.5)
Kazakhstan	43 (1.0)	43 (1.1)	43 (1.2)	43 (1.1)	40 (1.0)	53 (1.1)	41 (1.1)	31 (1.1)
Korea, Rep. of	74 (0.5)	77 (0.5)	71 (0.7)	71 (0.6)	75 (0.5)	80 (0.5)	73 (0.6)	65 (0.6)
Lebanon	34 (0.8)	37 (0.9)	35 (0.9)	33 (0.9)	31 (0.8)	47 (1.0)	31 (0.8)	21 (0.8)
Lithuania	47 (0.6)	49 (0.7)	40 (0.7)	46 (0.7)	54 (0.6)	56 (0.6)	47 (0.6)	32 (0.6)
Ψ Macedonia, Rep. of	32 (0.9)	32 (1.0)	32 (1.0)	33 (1.1)	33 (0.9)	41 (1.1)	31 (0.9)	23 (0.9)
Malaysia	34 (1.0)	39 (1.3)	28 (0.9)	33 (1.1)	38 (0.9)	44 (1.2)	33 (1.0)	23 (0.9)
⌘ Morocco	22 (0.2)	23 (0.3)	19 (0.3)	24 (0.4)	24 (0.3)	28 (0.3)	22 (0.3)	14 (0.2)
New Zealand	44 (1.4)	48 (1.7)	35 (1.3)	41 (1.3)	56 (1.3)	52 (1.5)	43 (1.3)	33 (1.3)
Norway	39 (0.6)	47 (0.8)	25 (0.5)	36 (0.7)	55 (0.7)	47 (0.6)	40 (0.6)	28 (0.6)
Ψ Oman	24 (0.3)	23 (0.4)	23 (0.4)	25 (0.3)	27 (0.4)	31 (0.4)	22 (0.3)	17 (0.3)
Ψ Palestinian Nat'l Auth.	29 (0.6)	29 (0.7)	27 (0.6)	30 (0.7)	30 (0.5)	37 (0.7)	27 (0.5)	20 (0.6)
Ψ Qatar	30 (0.5)	32 (0.6)	29 (0.6)	27 (0.5)	34 (0.6)	39 (0.6)	28 (0.5)	21 (0.5)
Romania	38 (0.8)	38 (0.9)	38 (1.0)	36 (0.9)	38 (0.7)	48 (1.0)	36 (0.8)	27 (0.8)
Russian Federation	56 (0.9)	58 (0.9)	56 (1.1)	54 (1.0)	54 (0.8)	67 (0.9)	55 (1.0)	42 (1.0)
Ψ Saudi Arabia	26 (0.7)	28 (0.9)	24 (0.7)	24 (0.7)	31 (0.8)	35 (0.9)	24 (0.7)	18 (0.6)
Singapore	73 (0.9)	77 (0.9)	72 (1.1)	71 (1.0)	72 (0.9)	82 (0.8)	73 (1.0)	62 (1.1)
Slovenia	47 (0.5)	52 (0.6)	38 (0.6)	46 (0.6)	55 (0.5)	57 (0.6)	45 (0.5)	35 (0.7)
Sweden	41 (0.5)	50 (0.5)	31 (0.5)	35 (0.5)	53 (0.6)	50 (0.5)	42 (0.5)	29 (0.5)
Ψ Syrian Arab Republic	25 (0.6)	24 (0.6)	24 (0.7)	25 (0.8)	26 (0.6)	31 (0.7)	24 (0.6)	17 (0.6)
Thailand	31 (0.9)	33 (1.0)	27 (0.9)	29 (0.9)	38 (0.8)	38 (1.0)	30 (0.8)	22 (0.8)
Tunisia	29 (0.6)	32 (0.7)	25 (0.5)	29 (0.6)	32 (0.7)	37 (0.7)	28 (0.6)	20 (0.5)
Turkey	38 (0.8)	36 (0.8)	35 (0.9)	37 (0.8)	47 (0.7)	44 (0.8)	37 (0.8)	30 (0.8)
Ukraine	42 (0.9)	43 (1.0)	39 (1.0)	41 (1.0)	45 (0.8)	52 (1.0)	41 (0.9)	29 (0.8)
United Arab Emirates	37 (0.5)	40 (0.5)	34 (0.5)	32 (0.5)	41 (0.4)	48 (0.5)	33 (0.5)	25 (0.4)
United States	48 (0.7)	53 (0.7)	43 (0.7)	41 (0.7)	58 (0.6)	61 (0.7)	46 (0.7)	35 (0.7)
International Avg.	41 (0.1)	43 (0.1)	37 (0.1)	39 (0.1)	45 (0.1)	49 (0.1)	39 (0.1)	30 (0.1)

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- ⌘ Average achievement not reliably measured because the percentage of students with achievement too low for estimation exceeds 25%.
- Ψ Reservations about reliability of average achievement because the percentage of students with achievement too low for estimation does not exceed 25% but exceeds 15%.
- () Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

Appendix E.2: Average Percent Correct in the Mathematics Content and Cognitive Domains (Continued)

Country	Overall Mathematics	Mathematics Content Domains				Mathematics Cognitive Domains		
		Number	Algebra	Geometry	Data and Chance	Knowing	Applying	Reasoning
Ninth Grade Participants								
ψ Botswana	25 (0.4)	27 (0.5)	21 (0.4)	23 (0.4)	31 (0.5)	34 (0.5)	23 (0.4)	17 (0.4)
* Honduras	17 (0.5)	19 (0.6)	15 (0.5)	14 (0.3)	22 (0.6)	22 (0.6)	17 (0.4)	11 (0.4)
* South Africa	20 (0.4)	21 (0.4)	18 (0.4)	18 (0.3)	25 (0.4)	26 (0.5)	19 (0.3)	14 (0.3)
Benchmarking Participants								
Alberta, Canada	47 (0.7)	56 (0.8)	35 (0.7)	41 (0.7)	58 (0.8)	56 (0.7)	46 (0.7)	36 (0.8)
Ontario, Canada	49 (0.6)	55 (0.7)	39 (0.6)	48 (0.7)	59 (0.7)	57 (0.7)	48 (0.6)	40 (0.7)
Quebec, Canada	54 (0.7)	61 (0.8)	44 (0.8)	51 (0.7)	62 (0.7)	64 (0.7)	54 (0.7)	40 (0.7)
Abu Dhabi, UAE	35 (0.8)	39 (0.9)	32 (0.9)	31 (0.8)	39 (0.8)	47 (0.9)	32 (0.9)	24 (0.8)
Dubai, UAE	42 (0.5)	45 (0.6)	39 (0.6)	36 (0.6)	46 (0.5)	54 (0.5)	39 (0.6)	29 (0.6)
Alabama, US	38 (1.4)	41 (1.8)	33 (1.3)	33 (1.1)	49 (1.5)	50 (1.5)	36 (1.4)	26 (1.4)
California, US	45 (1.2)	48 (1.4)	43 (1.4)	35 (1.1)	51 (1.2)	58 (1.2)	41 (1.3)	30 (1.2)
Colorado, US	51 (1.2)	55 (1.3)	43 (1.3)	46 (1.3)	61 (1.2)	61 (1.2)	49 (1.2)	38 (1.3)
Connecticut, US	51 (1.3)	56 (1.4)	43 (1.5)	43 (1.1)	61 (1.4)	63 (1.3)	48 (1.4)	37 (1.3)
Florida, US	49 (1.7)	53 (1.8)	42 (1.7)	44 (1.6)	58 (1.8)	62 (1.6)	46 (1.9)	35 (1.7)
Indiana, US	51 (1.4)	57 (1.5)	45 (1.6)	44 (1.4)	61 (1.3)	65 (1.4)	49 (1.5)	36 (1.5)
Massachusetts, US	62 (1.5)	67 (1.5)	56 (1.8)	56 (1.5)	69 (1.4)	73 (1.3)	59 (1.6)	50 (1.8)
Minnesota, US	58 (1.3)	65 (1.3)	51 (1.5)	49 (1.4)	66 (1.3)	70 (1.1)	55 (1.5)	43 (1.6)
North Carolina, US	55 (1.8)	61 (1.8)	50 (2.1)	48 (1.7)	62 (1.5)	67 (1.7)	53 (1.9)	41 (1.8)

