

Mathematics: Algebra / Knowing (MA13001 - M1_01)
 Label: Composite function
 Type: MC Key: D

COUNTRY	Year	N	A	B	C	D	E	OTHER INCOR RECT	DIFF	INVALID	OMIT	NOT REACHED	1.GIRL % Right	2.BOY % Right
Italy	1995	397	33.2	11.9	2.4	48.4	0.8	3.3	48.4	0.0	3.3	0.0	44.3	51.0
	2008	1073	23.9	13.0	2.6	50.0	1.6	8.8	50.0	0.0	8.1	0.7	51.8	49.1
Russian Federation	1995	1638	16.6	5.9	1.2	71.9	0.3	4.2	71.9	0.0	4.1	0.0	65.9	77.4
	2008	1589	10.5	5.5	1.8	80.0	1.2	1.0	80.0	0.0	0.9	0.1	76.0	83.3
Slovenia	1995	1536	18.6	12.0	1.9	64.1	0.4	2.9	64.1	0.2	2.7	0.0	62.7	66.0
	2008	1077	13.8	12.8	2.6	67.6	1.2	2.0	67.6	0.0	1.7	0.4	67.0	68.4
Sweden	1995	1001	21.8	12.6	2.8	59.6	2.6	0.7	59.6	0.0	0.6	0.1	59.7	59.5
	2008	1144	25.6	14.5	6.3	43.8	5.9	3.9	43.8	0.0	1.8	2.1	43.9	43.8
International Avg.	1995	1143	22.6	10.6	2.1	61.0	1.0	2.8	61.0	0.0	2.7	0.0	58.2	63.5
	2008	1221	18.4	11.5	3.3	60.4	2.5	3.9	60.4	0.0	3.1	0.8	59.7	61.1

DIFF = Percent correct OTHER INCORRECT = Sum of invalid, not reached and omitted responses
 Because of missing gender information, some totals may appear inconsistent.

Mathematics: Algebra / Reasoning (MA13002 - M1_02)
 Label: Identify the graph of function
 Type: MC Key: A

COUNTRY	Year	N	A	B	C	D	E	OTHER INCOR RECT	DIFF INVALID	OMIT	NOT REACHED	1.GIRL % Right	2.BOY % Right
Italy	1995	397	63.3	8.7	3.1	5.4	10.6	8.8	63.3	0.0	8.8	0.0	68.4
	2008	1074	50.9	9.5	9.2	5.1	14.5	10.8	50.9	0.0	10.1	0.7	52.5
Russian Federation	1995	1638	79.9	2.9	7.1	1.3	6.2	2.7	79.9	0.0	2.6	0.0	74.2
	2008	1588	75.0	2.8	7.3	3.1	10.9	0.9	75.0	0.0	0.8	0.1	72.9
Slovenia	1995	1536	57.1	9.2	4.8	7.9	11.8	9.2	57.1	0.2	9.0	0.0	56.4
	2008	1077	55.4	8.4	5.3	7.2	19.1	4.6	55.4	0.0	4.0	0.5	53.3
Sweden	1995	999	67.0	5.4	6.0	5.9	14.2	1.5	67.0	0.0	1.4	0.1	62.9
	2008	1144	41.4	12.3	7.2	10.4	22.1	6.7	41.4	0.0	4.4	2.3	37.7
International Avg.	1995	1143	66.8	6.6	5.2	5.1	10.7	5.5	66.8	0.1	5.4	0.0	65.5
	2008	1221	55.7	8.3	7.3	6.4	16.7	5.7	55.7	0.0	4.8	0.9	54.1

DIFF = Percent correct OTHER INCORRECT = Sum of invalid, not reached and omitted responses
 Because of missing gender information, some totals may appear inconsistent.

Mathematics: Algebra / Reasoning (MA13003 - M1_03)

Label: Predictions of 2 models compared

Type: MC Key: E

COUNTRY	Year	N	A	B	C	D	E	OTHER INCOR RECT	DIFF	INVALID	OMIT	NOT REACHED	1.GIRL % Right	2.BOY % Right
Italy	1995	398	13.7	8.0	8.2	6.0	54.1	10.0	54.1	0.8	9.3	0.0	45.5	59.8
	2008	1071	17.2	8.6	10.1	5.8	39.5	18.8	39.5	0.0	18.1	0.7	37.6	40.6
Russian Federation	1995	1638	10.9	5.6	4.7	3.1	69.5	6.2	69.5	0.0	6.1	0.1	66.2	72.4
	2008	1589	16.6	5.9	7.1	4.1	63.2	3.2	63.2	0.0	3.1	0.1	56.4	68.5
Slovenia	1995	1536	13.8	8.6	8.6	4.1	52.6	12.2	52.6	1.4	10.9	0.0	48.8	56.1
	2008	1077	18.9	5.3	8.4	6.4	53.1	8.0	53.1	0.0	7.4	0.6	45.8	64.5
Sweden	1995	999	5.7	9.9	5.1	2.7	70.2	6.4	70.2	5.8	0.5	0.1	68.7	70.8
	2008	1144	8.3	8.3	12.2	7.4	55.3	8.5	55.3	0.0	5.8	2.7	52.6	57.0
International Avg.	1995	1143	11.0	8.0	6.6	4.0	61.6	8.7	61.6	2.0	6.7	0.1	57.3	64.8
	2008	1220	15.2	7.0	9.5	5.9	52.8	9.6	52.8	0.0	8.6	1.0	48.1	57.7

DIFF = Percent correct OTHER INCORRECT = Sum of invalid, not reached and omitted responses
 Because of missing gender information, some totals may appear inconsistent.

Mathematics: Calculus / Knowing (MA13004 - M1_04)
 Label: Solve the limit of function
 Type: MC Key: B

COUNTRY	Year	N	A	B	C	D	E	OTHER INCOR RECT	DIFF	INVALID	OMIT	NOT REACHED	1.GIRL % Right	2.BOY % Right
Italy	1995	398	3.9	77.5	7.0	0.8	8.9	1.9	77.5	0.0	1.9	0.0	79.5	76.2
	2008	1075	3.2	75.1	6.9	0.3	9.9	4.7	75.1	0.0	3.6	1.1	84.7	69.9
Russian Federation	1995	1638	4.2	68.4	5.5	2.4	11.4	8.0	68.4	0.0	7.8	0.2	62.1	74.3
	2008	1589	7.8	63.6	8.5	3.8	11.3	5.1	63.6	0.0	4.9	0.2	61.9	65.0
Slovenia	1995	1536	7.6	65.8	5.0	2.4	11.3	7.9	65.8	0.3	7.7	0.0	66.8	64.7
	2008	1077	14.8	51.1	8.7	2.7	14.0	8.7	51.1	0.0	7.8	0.9	49.5	53.6
Sweden	1995	998	17.6	44.4	9.7	4.0	21.9	2.5	44.4	0.1	2.2	0.2	33.2	49.5
	2008	1144	17.2	27.4	15.0	5.4	25.3	9.6	27.4	0.0	6.0	3.6	23.6	29.8
International Avg.	1995	1143	8.3	64.0	6.8	2.4	13.4	5.1	64.0	0.1	4.9	0.1	60.4	66.2
	2008	1221	10.7	54.3	9.8	3.0	15.1	7.0	54.3	0.0	5.6	1.4	54.9	54.6

DIFF = Percent correct OTHER INCORRECT = Sum of invalid, not reached and omitted responses
 Because of missing gender information, some totals may appear inconsistent.

Mathematics: Calculus / Knowing (MA13006 - M1_06)

Label: Using chain rule

Type: MC Key: D

COUNTRY	Year	N	A	B	C	D	E	OTHER INCOR RECT	DIFF INVALID	OMIT	NOT REACHED	1.GIRL % Right	2.BOY % Right
Italy	1995	398	6.8	5.6	16.0	59.2	9.1	3.3	59.2	0.2	2.8	0.3	64.6
	2008	1073	6.7	6.8	21.4	42.0	8.9	14.3	42.0	0.0	12.6	1.7	47.5
Russian Federation	1995	1626	4.0	2.9	19.3	65.7	4.8	3.4	65.7	0.2	2.9	0.4	59.7
	2008	1589	5.3	2.7	22.7	61.6	5.0	2.6	61.6	0.0	2.3	0.4	62.1
Slovenia	1995	1536	5.2	7.1	23.2	45.1	4.9	14.6	45.1	0.0	14.5	0.0	46.4
	2008	1077	5.3	9.1	26.3	35.8	12.5	10.9	35.8	0.0	10.0	0.9	36.7
Sweden	1995	997	7.3	22.9	27.6	34.2	4.9	3.1	34.2	0.0	2.9	0.2	33.5
	2008	1144	9.7	21.6	26.5	26.5	7.6	8.1	26.5	0.0	4.4	3.7	29.2
International Avg.	1995	1139	5.8	9.6	21.5	51.0	5.9	6.1	51.0	0.1	5.8	0.2	51.1
	2008	1221	6.8	10.1	24.2	41.5	8.5	9.0	41.5	0.0	7.3	1.7	43.9

DIFF = Percent correct OTHER INCORRECT = Sum of invalid, not reached and omitted responses
 Because of missing gender information, some totals may appear inconsistent.

Mathematics: Geometry / Applying (MA13007 - M1_07)
Label: Slope sums of equilateral triangle
Type: MC Key: A

COUNTRY	Year	N	A	B	C	D	E	OTHER INCOR RECT	DIFF	INVALID	OMIT	NOT REACHED	1.GIRL % Right	2.BOY % Right
Italy	1995	398	48.2	2.0	13.1	18.5	2.4	15.8	48.2	0.0	15.5	0.3	43.6	51.1
	2008	1075	42.3	2.5	9.6	15.0	5.8	24.7	42.3	0.0	23.1	1.7	41.9	42.5
Russian Federation	1995	1636	53.0	0.8	10.8	20.9	3.7	10.9	53.0	0.0	10.4	0.4	46.6	58.9
	2008	1589	51.9	2.7	11.5	22.3	6.4	5.1	51.9	0.0	4.8	0.4	47.1	55.8
Slovenia	1995	1536	55.5	1.5	15.2	12.6	4.0	11.2	55.5	0.0	11.1	0.0	52.7	57.5
	2008	1077	52.7	3.3	17.5	14.4	4.6	7.4	52.7	0.0	6.4	1.0	47.3	61.2
Sweden	1995	1000	71.6	3.7	10.8	9.3	3.6	0.9	71.6	0.1	0.6	0.2	71.0	71.9
	2008	1144	44.8	6.2	21.0	13.2	6.7	8.1	44.8	0.0	4.3	3.8	41.6	46.8
International Avg.	1995	1143	57.1	2.0	12.5	15.3	3.4	9.7	57.1	0.0	9.4	0.2	53.5	59.8
	2008	1221	47.9	3.7	14.9	16.2	5.9	11.4	47.9	0.0	9.7	1.7	44.5	51.6

DIFF = Percent correct OTHER INCORRECT = Sum of invalid, not reached and omitted responses
Because of missing gender information, some totals may appear inconsistent.

Mathematics: Geometry / Reasoning (MA13008 - M1_08)
 Label: Length of PT is equal to
 Type: MC Key: D

COUNTRY	Year	N	A	B	C	D	OTHER INCOR RECT	DIFF	INVALID	OMIT	NOT REACHED	1.GIRL % Right	2.BOY % Right
Italy	1995	398	7.2	6.8	5.7	77.9	2.4	77.9	0.0	2.1	0.3	80.7	76.1
	2008	1073	7.0	11.1	7.9	64.6	9.4	64.6	0.0	6.9	2.5	73.3	60.0
Russian Federation	1995	1637	1.1	2.0	1.8	92.8	2.2	92.8	0.1	1.3	0.8	91.4	94.1
	2008	1589	3.7	2.8	4.8	87.4	1.4	87.4	0.0	0.9	0.5	86.2	88.3
Slovenia	1995	1536	6.3	8.6	6.4	72.3	6.4	72.3	0.6	5.6	0.2	73.1	71.0
	2008	1077	9.6	10.5	12.8	63.4	3.7	63.4	0.0	2.4	1.2	60.0	68.7
Sweden	1995	999	5.2	5.5	13.6	73.9	1.8	73.9	0.4	1.1	0.2	79.0	71.6
	2008	1144	10.7	15.5	24.8	41.1	8.0	41.1	0.0	3.7	4.4	41.5	40.8
International Avg.	1995	1143	5.0	5.7	6.9	79.2	3.2	79.2	0.3	2.5	0.4	81.1	78.2
	2008	1221	7.7	10.0	12.6	64.1	5.6	64.1	0.0	3.5	2.2	65.2	64.4

DIFF = Percent correct OTHER INCORRECT = Sum of invalid, not reached and omitted responses
 Because of missing gender information, some totals may appear inconsistent.

Mathematics: Algebra / Applying (MA13009 - M1_09)
 Label: Integer coordinates of function
 Type: MC Key: C

COUNTRY	Year	N	A	B	C	D	OTHER INCOR RECT	DIFF	INVALID	OMIT	NOT REACHED	1.GIRL % Right	2.BOY % Right
Italy	1995	398	2.9	4.2	63.4	25.6	3.9	63.4	0.5	3.1	0.3	63.2	63.5
	2008	1075	2.3	6.6	46.3	29.4	15.4	46.3	0.0	12.7	2.7	48.5	45.2
Russian Federation	1995	1636	0.1	1.7	84.2	11.4	2.5	84.2	0.0	1.5	1.0	82.1	86.2
	2008	1589	1.2	3.2	77.2	16.4	2.0	77.2	0.0	1.3	0.7	73.3	80.2
Slovenia	1995	1536	1.8	3.3	65.7	27.1	2.1	65.7	0.0	1.9	0.2	62.1	68.5
	2008	1077	2.4	5.7	59.6	28.1	4.3	59.6	0.0	2.8	1.4	57.9	62.3
Sweden	1995	999	4.1	6.4	59.8	29.2	0.5	59.8	0.0	0.3	0.2	51.6	63.4
	2008	1144	5.1	9.7	38.8	40.0	6.5	38.8	0.0	1.7	4.7	33.7	41.9
International Avg.	1995	1142	2.2	3.9	68.3	23.3	2.3	68.3	0.1	1.7	0.4	64.8	70.4
	2008	1221	2.7	6.3	55.5	28.5	7.0	55.5	0.0	4.6	2.4	53.4	57.4

DIFF = Percent correct OTHER INCORRECT = Sum of invalid, not reached and omitted responses
 Because of missing gender information, some totals may appear inconsistent.

Mathematics: Algebra / Knowing (MA13011 - M2_01)

Label: Find an equivalent fraction

Type: MC Key: A

COUNTRY	Year	N	A	B	C	D	E	OTHER INCOR RECT	DIFF	INVALID	OMIT	NOT REACHED	1.GIRL % Right	2.BOY % Right
Italy	1995	126	55.0	17.7	5.3	7.5	10.9	3.7	55.0	0.0	3.7	0.0	61.0	52.4
	2008	1061	61.6	10.8	6.3	11.6	5.1	4.6	61.6	0.0	4.6	0.0	66.3	59.1
Russian Federation	1995	468	78.9	5.8	2.2	6.8	4.1	2.3	78.9	0.0	2.1	0.2	75.5	82.2
	2008	1597	82.2	5.5	3.7	4.8	3.2	0.5	82.2	0.0	0.5	0.0	81.2	83.1
Slovenia	1995	452	62.7	11.4	6.3	12.6	3.2	3.8	62.7	0.2	3.6	0.0	57.6	67.5
	2008	1066	59.6	9.7	7.6	15.6	5.8	1.8	59.6	0.0	1.8	0.0	59.0	60.6
Sweden	1995	241	52.4	12.1	5.9	20.6	7.9	1.1	52.4	0.0	1.1	0.0	55.8	50.6
	2008	1159	22.6	8.4	12.0	45.5	8.0	3.5	22.6	0.0	3.5	0.0	19.9	24.3
International Avg.	1995	322	62.2	11.8	4.9	11.9	6.5	2.7	62.2	0.0	2.6	0.0	62.5	63.2
	2008	1221	56.5	8.6	7.4	19.4	5.5	2.6	56.5	0.0	2.6	0.0	56.6	56.8

DIFF = Percent correct OTHER INCORRECT = Sum of invalid, not reached and omitted responses
Because of missing gender information, some totals may appear inconsistent.

Mathematics: Algebra / Knowing (MA13012 - M2_02)
 Label: Cubing a trigonometric function
 Type: MC Key: C

COUNTRY	Year	N	A	B	C	D	E	OTHER INCOR RECT	DIFF	INVALID	OMIT	NOT REACHED	1.GIRL % Right	2.BOY % Right
Italy	1995	126	6.9	11.6	18.6	34.2	5.5	23.3	18.6	1.6	21.7	0.0	10.5	22.0
	2008	1060	1.8	11.5	24.0	34.0	7.0	21.7	24.0	0.0	21.7	0.0	17.4	27.5
Russian Federation	1995	468	0.2	3.7	55.9	22.1	6.6	11.6	55.9	0.0	11.4	0.2	49.4	62.1
	2008	1596	1.5	5.6	65.2	16.5	9.1	2.2	65.2	0.0	2.2	0.0	64.7	65.6
Slovenia	1995	452	1.9	8.1	40.3	20.6	12.2	16.9	40.3	1.5	15.4	0.0	41.7	39.3
	2008	1066	2.8	7.9	23.4	31.2	26.5	8.3	23.4	0.0	8.3	0.0	24.3	21.8
Sweden	1995	242	1.4	15.9	46.2	24.4	10.1	1.9	46.2	0.0	1.9	0.0	53.8	42.0
	2008	1159	6.1	20.1	40.2	21.6	8.3	3.7	40.2	0.0	3.7	0.0	40.2	40.2
International Avg.	1995	322	2.6	9.8	40.2	25.3	8.6	13.4	40.2	0.8	12.6	0.0	38.9	41.4
	2008	1220	3.1	11.3	38.2	25.8	12.7	9.0	38.2	0.0	9.0	0.0	36.6	38.8

DIFF = Percent correct OTHER INCORRECT = Sum of invalid, not reached and omitted responses
 Because of missing gender information, some totals may appear inconsistent.

Mathematics: Algebra / Applying (MA13013 - M2_03)
 Label: Value of x to make function negative
 Type: MC Key: E

COUNTRY	Year	N	A	B	C	D	E	OTHER INCOR RECT	DIFF	INVALID	OMIT	NOT REACHED	1.GIRL % Right	2.BOY % Right
Italy	1995	126	6.1	14.1	5.0	3.2	63.1	8.5	63.1	0.6	7.9	0.0	60.8	64.1
	2008	1061	2.7	15.3	4.9	4.4	67.7	4.9	67.7	0.0	4.9	0.0	72.7	65.2
Russian Federation	1995	467	5.6	5.6	1.4	3.7	79.0	4.6	79.0	0.1	4.2	0.2	77.2	80.8
	2008	1597	1.1	4.8	1.6	2.7	88.6	1.1	88.6	0.0	1.1	0.0	87.8	89.3
Slovenia	1995	452	9.7	6.1	3.2	16.5	50.9	13.6	50.9	1.9	11.7	0.0	49.5	53.5
	2008	1066	11.3	16.5	6.8	9.2	47.4	8.7	47.4	0.0	8.7	0.0	46.1	49.5
Sweden	1995	241	5.5	11.1	6.7	5.8	67.4	3.5	67.4	0.0	3.5	0.0	57.4	72.8
	2008	1159	10.3	17.4	12.3	13.1	40.6	6.3	40.6	0.0	6.3	0.0	40.0	41.0
International Avg.	1995	322	6.7	9.2	4.1	7.3	65.1	7.5	65.1	0.6	6.8	0.0	61.2	67.8
	2008	1221	6.4	13.5	6.4	7.4	61.1	5.3	61.1	0.0	5.3	0.0	61.7	61.2

DIFF = Percent correct OTHER INCORRECT = Sum of invalid, not reached and omitted responses
 Because of missing gender information, some totals may appear inconsistent.

Mathematics: Calculus / Knowing (MA13015 - M2_05)
 Label: Derivative of exponential function
 Type: MC Key: C

COUNTRY	Year	N	A	B	C	D	E	OTHER INCOR RECT	DIFF	OMIT	NOT REACHED	1.GIRL % Right	2.BOY % Right
Italy	1995	126	8.9	16.7	62.5	6.8	3.4	1.6	62.5	1.6	0.0	74.0	57.6
	2008	1060	8.4	10.7	68.1	8.8	1.7	2.3	68.1	2.3	0.0	71.7	66.1
Russian Federation	1995	468	12.5	5.7	73.7	2.8	2.4	2.9	73.7	2.5	0.5	72.3	75.0
	2008	1596	11.2	8.1	73.3	6.0	0.7	0.7	73.3	0.7	0.0	73.1	73.4
Slovenia	1995	452	8.0	14.4	55.6	11.7	2.3	8.0	55.6	8.0	0.0	57.7	53.7
	2008	1066	17.2	13.5	48.1	15.7	3.5	2.0	48.1	2.0	0.0	48.7	47.1
Sweden	1995	244	15.9	16.5	57.7	6.6	2.7	0.5	57.7	0.5	0.0	62.7	55.0
	2008	1159	12.3	15.8	52.0	14.2	5.0	0.7	52.0	0.7	0.0	49.7	53.6
International Avg.	1995	323	11.3	13.3	62.4	7.0	2.7	3.3	62.4	3.2	0.1	66.7	60.3
	2008	1220	12.3	12.0	60.4	11.2	2.8	1.4	60.4	1.4	0.0	60.8	60.0

DIFF = Percent correct OTHER INCORRECT = Sum of invalid, not reached and omitted responses
 Because of missing gender information, some totals may appear inconsistent.

Mathematics: Calculus / Applying (MA13016 - M2_06)
 Label: Cylinder radius with maximum volume
 Type: MC Key: D

COUNTRY	Year	N	A	B	C	D	E	OTHER INCOR RECT	DIFF	INVALID	OMIT	NOT REACHED	1.GIRL % Right	2.BOY % Right
Italy	1995	126	6.3	14.1	9.5	35.7	25.3	9.0	35.7	0.0	9.0	0.0	23.2	41.1
	2008	1061	6.3	11.3	11.1	32.1	23.2	16.0	32.1	0.0	16.0	0.0	28.4	34.0
Russian Federation	1995	468	5.4	14.1	10.3	47.7	13.3	9.2	47.7	0.2	8.1	0.8	50.5	45.0
	2008	1597	8.7	18.8	11.6	46.7	11.9	2.3	46.7	0.0	2.3	0.0	44.4	48.6
Slovenia	1995	452	6.2	18.5	18.4	25.0	16.3	15.7	25.0	1.0	14.7	0.0	21.3	30.1
	2008	1066	8.8	12.3	17.2	30.5	24.1	7.1	30.5	0.0	7.1	0.0	26.9	36.3
Sweden	1995	242	5.8	23.7	13.0	41.5	14.7	1.4	41.5	0.0	1.4	0.0	47.6	38.1
	2008	1159	11.1	21.5	16.6	33.9	14.0	2.9	33.9	0.0	2.8	0.1	34.2	33.7
International Avg.	1995	322	5.9	17.6	12.8	37.5	17.4	8.8	37.5	0.3	8.3	0.2	35.7	38.6
	2008	1221	8.7	16.0	14.1	35.8	18.3	7.1	35.8	0.0	7.1	0.0	33.5	38.1

DIFF = Percent correct OTHER INCORRECT = Sum of invalid, not reached and omitted responses
 Because of missing gender information, some totals may appear inconsistent.

Mathematics: Geometry / Applying (MA13017 - M2_07)
 Label: Equation of perpendicular line
 Type: MC Key: E

COUNTRY	Year	N	A	B	C	D	E	OTHER INCOR RECT	DIFF	INVALID	OMIT	NOT REACHED	1.GIRL % Right	2.BOY % Right
Italy	1995	126	15.6	0.4	20.2	13.7	43.2	6.8	43.2	0.0	6.8	0.0	57.1	37.3
	2008	1060	21.3	5.7	9.2	9.2	44.6	10.1	44.6	0.0	10.1	0.0	46.6	43.5
Russian Federation	1995	468	31.4	1.3	5.2	5.0	42.5	14.5	42.5	0.0	13.7	0.8	43.5	41.6
	2008	1597	34.1	3.5	5.5	5.7	48.6	2.7	48.6	0.0	2.7	0.0	46.9	49.9
Slovenia	1995	452	13.3	4.9	11.0	8.1	51.4	11.4	51.4	0.6	10.7	0.0	50.1	51.4
	2008	1066	17.9	4.9	12.6	10.3	46.6	7.7	46.6	0.0	7.7	0.0	46.9	46.2
Sweden	1995	240	25.4	8.2	14.4	8.6	39.8	3.5	39.8	0.4	3.0	0.0	38.0	40.8
	2008	1159	26.4	11.0	17.6	14.3	23.3	7.4	23.3	0.0	7.1	0.3	23.2	23.3
International Avg.	1995	322	21.4	3.7	12.7	8.9	44.2	9.1	44.2	0.3	8.6	0.2	47.2	42.8
	2008	1221	24.9	6.3	11.2	9.9	40.8	7.0	40.8	0.0	6.9	0.1	40.9	40.7

DIFF = Percent correct OTHER INCORRECT = Sum of invalid, not reached and omitted responses
 Because of missing gender information, some totals may appear inconsistent.

Mathematics: Geometry / Knowing (MA13018 - M2_08)

Label: Difference of two vectors

Type: MC Key: B

COUNTRY	Year	N	A	B	C	D	E	OTHER INCOR RECT	DIFF	OMIT	NOT REACHED	1.GIRL % Right	2.BOY % Right
Italy	1995	126	7.4	51.8	22.7	2.0	2.9	13.2	51.8	13.2	0.0	53.3	51.1
	2008	1061	2.0	50.9	24.6	3.7	3.3	15.5	50.9	15.5	0.0	49.2	51.8
Russian Federation	1995	468	0.2	76.4	17.6	0.5	2.0	3.4	76.4	1.9	1.5	79.8	73.3
	2008	1597	1.0	81.7	14.6	0.6	1.8	0.3	81.7	0.3	0.0	81.4	81.9
Slovenia	1995	452	1.3	50.4	31.8	5.0	2.6	8.9	50.4	8.9	0.0	50.1	50.9
	2008	1066	2.8	50.2	29.5	8.5	2.8	6.3	50.2	6.1	0.1	52.2	46.9
Sweden	1995	242	2.0	63.6	21.7	2.7	5.7	4.3	63.6	4.0	0.3	63.0	63.9
	2008	1159	3.4	44.7	32.7	7.0	5.2	7.0	44.7	6.2	0.8	42.3	46.3
International Avg.	1995	322	2.7	60.5	23.5	2.5	3.3	7.5	60.5	7.0	0.5	61.5	59.8
	2008	1221	2.3	56.9	25.3	4.9	3.3	7.3	56.9	7.0	0.2	56.3	56.7

DIFF = Percent correct OTHER INCORRECT = Sum of invalid, not reached and omitted responses
 Because of missing gender information, some totals may appear inconsistent.

Mathematics: Geometry / Knowing (MA13019 - M2_09)
Label: Equation representing set of points
Type: MC Key: B

COUNTRY	Year	N	A	B	C	D	OTHER INCOR RECT	DIFF	INVALID	OMIT	NOT REACHED	1.GIRL % Right	2.BOY % Right
Italy	1995	126	22.1	28.6	22.1	7.9	19.4	28.6	1.8	17.5	0.0	35.7	25.5
	2008	1061	19.1	23.5	16.8	10.5	30.1	23.5	0.0	30.1	0.1	20.8	24.9
Russian Federation	1995	468	17.2	29.8	18.0	9.6	25.4	29.8	0.0	23.9	1.5	26.8	32.6
	2008	1597	30.0	33.5	22.7	9.2	4.5	33.5	0.0	4.5	0.0	30.8	35.7
Slovenia	1995	452	22.7	14.0	30.9	6.8	25.7	14.0	0.2	25.4	0.0	10.5	18.3
	2008	1066	27.6	16.9	35.9	6.5	13.1	16.9	0.0	12.9	0.2	15.2	19.7
Sweden	1995	237	22.7	28.9	27.4	11.6	9.4	28.9	0.0	9.1	0.3	21.6	33.0
	2008	1159	26.8	20.4	31.2	9.9	11.7	20.4	0.0	10.7	1.0	17.1	22.6
International Avg.	1995	321	21.2	25.3	24.6	9.0	20.0	25.3	0.5	19.0	0.5	23.6	27.4
	2008	1221	25.9	23.6	26.7	9.0	14.9	23.6	0.0	14.5	0.3	21.0	25.7

DIFF = Percent correct OTHER INCORRECT = Sum of invalid, not reached and omitted responses
Because of missing gender information, some totals may appear inconsistent.

Mathematics: Geometry / Applying (MA13020 - M2_10)
Label: Value of vector in triangle
Type: MC Key: C

COUNTRY	Year	N	A	B	C	D	E	OTHER INCOR RECT	DIFF	INVALID	OMIT	NOT REACHED	1.GIRL % Right	2.BOY % Right
Italy	1995	126	18.0	14.0	24.1	7.1	11.7	25.0	24.1	0.0	25.0	0.0	22.1	25.0
	2008	1061	13.4	9.2	23.2	8.4	8.8	37.0	23.2	0.0	36.9	0.1	19.3	25.2
Russian Federation	1995	468	18.8	3.5	53.1	0.3	9.8	14.4	53.1	0.1	12.6	1.7	46.9	59.2
	2008	1596	16.9	5.3	62.2	2.3	10.4	3.0	62.2	0.0	3.0	0.0	57.4	66.0
Slovenia	1995	452	12.4	10.4	47.0	6.0	10.3	14.0	47.0	0.0	14.0	0.0	44.6	50.7
	2008	1066	15.5	15.5	36.8	6.5	12.6	13.2	36.8	0.0	13.0	0.2	37.0	36.5
Sweden	1995	238	15.2	34.1	17.2	15.6	9.9	7.9	17.2	0.4	7.2	0.3	22.5	14.4
	2008	1159	15.7	29.7	18.9	14.6	9.9	11.1	18.9	0.0	10.1	1.0	21.5	17.3
International Avg.	1995	321	16.1	15.5	35.4	7.3	10.5	15.3	35.4	0.1	14.7	0.5	34.0	37.3
	2008	1221	15.4	14.9	35.3	7.9	10.4	16.0	35.3	0.0	15.7	0.3	33.8	36.3

DIFF = Percent correct OTHER INCORRECT = Sum of invalid, not reached and omitted responses
Because of missing gender information, some totals may appear inconsistent.

Mathematics: Geometry / Knowing (MA13021 - M3_01)
 Label: Shape created by rotating line
 Type: MC Key: A

COUNTRY	Year	N	A	B	C	D	E	OTHER INCOR RECT	DIFF INVALID	OMIT	NOT REACHED	1.GIRL % Right	2.BOY % Right
Italy	1995	126	76.8	7.3	6.1	9.2	0.4	0.2	76.8	0.0	0.2	0.0	76.9
	2008	1071	69.8	5.2	7.8	10.3	2.7	4.1	69.8	0.0	4.0	0.1	66.7
Russian Federation	1995	467	83.2	2.3	1.8	8.0	1.3	3.5	83.2	0.4	1.5	1.7	81.5
	2008	1588	76.5	5.4	4.1	11.3	2.7	0.2	76.5	0.0	0.2	0.0	72.4
Slovenia	1995	452	56.4	7.1	8.3	17.8	8.6	1.8	56.4	0.0	1.8	0.0	53.5
	2008	1083	54.3	9.4	12.4	18.7	3.9	1.3	54.3	0.0	0.9	0.4	49.5
Sweden	1995	244	90.0	0.4	1.6	7.3	0.0	0.8	90.0	0.0	0.5	0.3	85.7
	2008	1148	74.0	2.5	6.9	12.4	2.0	2.2	74.0	0.0	1.1	1.1	74.3
International Avg.	1995	322	76.6	4.3	4.4	10.6	2.6	1.6	76.6	0.1	1.0	0.5	74.4
	2008	1223	68.6	5.6	7.8	13.2	2.8	2.0	68.6	0.0	1.6	0.4	65.7

DIFF = Percent correct OTHER INCORRECT = Sum of invalid, not reached and omitted responses
 Because of missing gender information, some totals may appear inconsistent.

Mathematics: Calculus / Knowing (MA13024 - M3_04)
 Label: Integral of function
 Type: MC Key: B

COUNTRY	Year	N	A	B	C	D	E	OTHER INCOR RECT	DIFF	INVALID	OMIT	NOT REACHED	1.GIRL % Right	2.BOY % Right
Italy	1995	126	2.9	59.2	12.7	5.1	7.3	12.8	59.2	1.6	9.7	1.5	57.1	60.0
	2008	1071	3.5	46.3	9.6	8.0	8.4	24.2	46.3	0.0	23.9	0.4	44.3	47.4
Russian Federation	1995	468	1.0	72.6	4.4	3.6	6.5	11.8	72.6	0.0	9.8	2.1	70.1	75.1
	2008	1585	5.3	71.9	9.7	5.0	5.3	2.8	71.9	0.0	2.8	0.0	70.1	73.3
Slovenia	1995	452	3.4	30.7	12.1	7.2	6.3	40.4	30.7	1.6	38.2	0.5	27.0	33.5
	2008	1083	4.8	43.9	15.6	7.9	12.3	15.4	43.9	0.0	14.6	0.8	41.0	48.2
Sweden	1995	242	5.9	54.4	15.1	4.0	16.1	4.4	54.4	0.0	2.9	1.4	44.1	60.0
	2008	1148	8.1	41.5	24.6	5.8	11.1	8.9	41.5	0.0	6.9	1.9	41.5	41.5
International Avg.	1995	322	3.3	54.2	11.1	5.0	9.1	17.3	54.2	0.8	15.2	1.4	49.6	57.2
	2008	1222	5.4	50.9	14.9	6.7	9.3	12.8	50.9	0.0	12.1	0.8	49.2	52.6

DIFF = Percent correct OTHER INCORRECT = Sum of invalid, not reached and omitted responses
 Because of missing gender information, some totals may appear inconsistent.

Mathematics: Calculus / Knowing (MA13025A - M3_05A)

Label: Function/where not continuous

Type: CR Key: X

COUNTRY	Year	N	10	79	99	INVA LID	OMIT	NOT REACH ED	V1	1.GIRL % Right	2.BOY % Right

Italy	1995	126	53.4	19.7	26.9	0.3	23.1	3.4	53.4	53.9	53.3
	2008	1069	51.8	20.3	28.0	0.0	26.2	1.7	51.8	52.9	51.1
Russian Federation	1995	468	54.0	20.8	25.3	0.3	21.4	3.5	54.0	53.0	54.9
	2008	1589	58.7	29.1	12.2	0.0	12.1	0.1	58.7	58.3	59.0
Slovenia	1995	452	55.1	19.3	25.6	0.5	23.4	1.6	55.1	50.7	58.9
	2008	1083	58.1	27.2	14.7	0.0	13.3	1.3	58.1	53.9	64.2
Sweden	1995	244	37.4	38.1	24.5	0.0	22.0	2.5	37.4	40.8	35.6
	2008	1148	22.5	51.5	26.0	0.0	23.3	2.7	22.5	21.5	23.0

International Avg.	1995	323	50.0	24.5	25.6	0.3	22.5	2.8	50.0	49.6	50.7
	2008	1222	47.8	32.0	20.2	0.0	18.8	1.5	47.8	46.6	49.4

V1 = Percent scoring 1 or better V2 = Percent scoring 2 or better
Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.
Because of missing gender information, some totals may appear inconsistent.

Mathematics: Calculus / Knowing (MA13025B - M3_05B)
Label: Function/where not differentiable
Type: CR Key: X

COUNTRY	Year	N	10	70	71	72	79	99	INVA LID	OMIT	NOT REACH ED	V1	1.GIRL % Right	2.BOY % Right
Italy	1995	126	9.8	27.3	6.7	5.8	18.8	31.6	0.0	25.2	6.4	9.8	5.9	11.4
	2008	1071	8.2	25.6	3.9	4.9	16.3	41.2	0.0	35.8	5.4	8.2	6.6	9.1
Russian Federation	1995	468	18.3	25.6	2.6	6.6	9.2	37.7	0.0	33.1	4.6	18.3	15.4	21.0
	2008	1589	15.9	25.9	5.6	8.4	19.7	24.5	0.0	23.0	1.5	15.9	14.1	17.3
Slovenia	1995	452	1.9	16.1	2.2	12.5	10.5	56.8	2.2	51.5	3.1	1.9	1.4	2.6
	2008	1083	3.3	23.7	1.6	15.3	19.5	36.6	0.0	34.9	1.8	3.3	2.7	4.1
Sweden	1995	244	1.7	27.5	1.8	31.8	11.5	25.7	0.4	16.8	8.5	1.7	1.0	2.1
	2008	1148	3.4	28.3	1.6	16.0	21.2	29.5	0.0	23.1	6.4	3.4	2.4	4.1
International Avg.	1995	323	7.9	24.1	3.3	14.2	12.5	38.0	0.6	31.7	5.7	7.9	5.9	9.3
	2008	1223	7.7	25.9	3.2	11.1	19.2	33.0	0.0	29.2	3.8	7.7	6.4	8.6

V1 = Percent scoring 1 or better V2 = Percent scoring 2 or better
Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.
Because of missing gender information, some totals may appear inconsistent.

Mathematics: Geometry / Applying (MA13026A - M3_06A)
Label: Triangle abc/reflection
Type: CR Key: X

COUNTRY	Year	N	10	70	71	79	99	INVA LID	OMIT	NOT REACH ED	V1	1.GIRL % Right	2.BOY % Right
Italy	1995	126	65.8	4.3	5.1	11.8	13.1	1.5	5.0	6.6	65.8	65.8	65.7
	2008	1070	54.9	2.5	6.7	21.2	14.8	0.0	8.8	6.0	54.9	56.5	54.0
Russian Federation	1995	468	75.4	3.8	5.3	9.2	6.3	0.0	1.2	5.1	75.4	74.4	76.3
	2008	1588	75.0	2.1	6.2	10.7	5.9	0.0	4.4	1.6	75.0	74.5	75.5
Slovenia	1995	452	69.2	1.4	0.3	21.9	7.3	2.0	2.2	3.1	69.2	66.7	71.6
	2008	1083	69.7	7.6	2.7	16.9	3.1	0.0	0.9	2.2	69.7	68.7	71.2
Sweden	1995	244	39.5	10.0	1.6	25.4	23.5	0.4	13.6	9.5	39.5	25.4	47.1
	2008	1148	18.8	8.3	5.2	34.5	33.2	0.0	26.0	7.2	18.8	17.9	19.4
International Avg.	1995	323	62.4	4.8	3.1	17.1	12.6	1.0	5.5	6.1	62.4	58.1	65.2
	2008	1222	54.6	5.1	5.2	20.8	14.3	0.0	10.0	4.2	54.6	54.4	55.0

V1 = Percent scoring 1 or better V2 = Percent scoring 2 or better
Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.
Because of missing gender information, some totals may appear inconsistent.

Mathematics: Geometry / Applying (MA13026B - M3_06B)
Label: Triangle abc/rotation
Type: CR Key: X

COUNTRY	Year	N	10	70	71	72	79	99	INVA LID	OMIT	NOT REACH ED	V1	1.GIRL % Right	2.BOY % Right
Italy	1995	126	26.8	7.3	4.2	0.2	26.1	35.4	1.5	27.3	6.6	26.8	14.7	32.0
	2008	1070	14.7	2.7	1.8	1.2	43.4	36.1	0.0	29.2	6.9	14.7	11.7	16.5
Russian Federation	1995	468	37.9	2.0	4.5	1.5	28.1	25.9	1.7	18.9	5.4	37.9	26.7	48.7
	2008	1588	33.1	1.3	8.6	2.2	39.0	15.7	0.0	14.0	1.8	33.1	25.5	38.7
Slovenia	1995	452	9.4	19.0	0.6	0.0	33.9	37.2	3.3	30.7	3.1	9.4	5.5	14.3
	2008	1083	9.7	11.0	2.8	0.2	55.6	20.8	0.0	18.6	2.2	9.7	6.4	14.6
Sweden	1995	244	11.4	4.2	4.8	0.3	40.0	39.2	1.0	24.4	13.8	11.4	6.6	14.1
	2008	1148	9.7	2.3	3.0	0.7	41.6	42.8	0.0	32.4	10.4	9.7	5.0	12.7
International Avg.	1995	323	21.4	8.1	3.5	0.5	32.0	34.4	1.9	25.3	7.2	21.4	13.4	27.3
	2008	1222	16.8	4.3	4.0	1.1	44.9	28.8	0.0	23.5	5.3	16.8	12.1	20.6

V1 = Percent scoring 1 or better V2 = Percent scoring 2 or better
Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.
Because of missing gender information, some totals may appear inconsistent.

Mathematics: Algebra / Reasoning (MA13027 - M3_07)
 Label: Limit of the perimeter of polygon
 Type: CR Key: X

COUNTRY	Year	N	20	21	10	11	70	71	79	99	INVA LID	OMIT	NOT REACH ED	V1	V2	1.GIRL % Right	2.BOY % Right
Italy	1995	126	34.5	5.7	5.3	10.6	2.1	6.8	8.3	26.7	0.2	18.3	8.3	56.0	40.2	21.0	48.4
	2008	1071	23.9	0.0	1.5	10.6	1.8	1.8	11.9	48.4	0.0	37.4	10.9	36.0	23.9	18.0	27.3
Russian Federation	1995	467	35.4	3.4	0.3	7.7	2.6	1.3	9.1	40.1	0.8	28.5	10.8	46.9	38.8	29.3	48.0
	2008	1589	40.6	0.0	1.2	5.8	1.7	2.7	15.8	32.2	0.0	29.2	3.0	47.6	40.6	31.7	47.1
Slovenia	1995	452	6.6	0.6	1.9	4.7	0.8	9.5	23.4	52.5	11.0	30.0	11.4	13.8	7.2	1.9	13.6
	2008	1083	10.0	0.0	1.1	3.7	0.5	5.2	46.0	33.6	0.0	27.6	6.0	14.7	10.0	6.0	15.7
Sweden	1995	244	18.6	12.4	0.3	3.6	7.4	0.0	8.8	48.9	3.3	26.4	19.2	34.9	31.0	33.1	29.9
	2008	1148	20.4	0.0	0.1	3.5	7.6	0.1	28.9	39.5	0.0	28.0	11.5	23.9	20.4	17.2	22.4
International Avg.	1995	322	23.8	5.5	2.0	6.6	3.3	4.4	12.4	42.0	3.8	25.8	12.4	37.9	29.3	21.3	35.0
	2008	1223	23.7	0.0	1.0	5.9	2.9	2.5	25.6	38.4	0.0	30.6	7.9	30.6	23.7	18.2	28.1

V1 = Percent scoring 1 or better V2 = Percent scoring 2 or better
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.
 Because of missing gender information, some totals may appear inconsistent.

Mathematics: Algebra / Knowing (MA13028 - M3_08)
Label: Steps for mathematical induction
Type: CR Key: X

COUNTRY	Year	N	10	70	71	72	79	99	INVA LID	OMIT	NOT REACH ED	V1	1.GIRL % Right	2.BOY % Right
Italy	1995	126	0.2	13.2	0.3	0.0	0.0	86.4	6.6	67.2	12.5	0.2	.	0.3
	2008	1071	1.3	0.6	1.2	0.0	11.3	85.5	0.0	68.0	17.6	1.3	1.6	1.2
Russian Federation	1995	467	29.3	14.3	1.0	0.0	0.0	55.4	2.1	33.6	19.7	29.3	21.5	36.8
	2008	1589	12.1	0.8	4.9	0.4	24.0	57.8	0.0	51.1	6.7	12.1	10.9	13.0
Slovenia	1995	452	25.8	18.0	0.0	0.0	0.0	56.2	6.8	27.1	22.3	25.8	26.7	23.7
	2008	1083	10.0	1.1	0.5	0.4	28.8	59.2	0.0	50.2	9.0	10.0	10.4	9.5
Sweden	1995	244	0.2	6.2	0.0	0.0	0.0	93.5	7.6	51.8	34.1	0.2	0.7	.
	2008	1148	2.0	0.9	0.7	0.1	29.7	66.7	0.0	52.0	14.7	2.0	0.3	3.1
International Avg.	1995	322	13.9	12.9	0.3	0.0	0.0	72.9	5.8	44.9	22.2	13.9	16.3	20.3
	2008	1223	6.4	0.8	1.8	0.2	23.5	67.3	0.0	55.3	12.0	6.4	5.8	6.7

V1 = Percent scoring 1 or better V2 = Percent scoring 2 or better
Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.
Because of missing gender information, some totals may appear inconsistent.

Mathematics: Geometry / Reasoning (MA13029 - M3_09)
Label: Prove e is midpoint of quadrilateral
Type: CR Key: X

COUNTRY	Year	N	20	10	19	79	99	INVA LID	OMIT	NOT REACH ED	V1	V2	1.GIRL % Right	2.BOY % Right
Italy	1995	126	29.6	4.4	13.2	12.7	40.1	2.7	4.9	32.5	47.2	29.6	27.9	30.3
	2008	1071	20.4	5.9	0.0	21.9	51.9	0.0	26.0	25.9	26.3	20.4	21.1	20.0
Russian Federation	1995	467	50.1	1.9	5.7	10.1	32.3	1.4	5.0	26.0	57.6	50.1	49.8	50.3
	2008	1588	41.8	12.9	0.0	24.5	20.7	0.0	11.7	9.1	54.7	41.8	40.4	42.8
Slovenia	1995	451	23.3	6.0	1.4	19.1	50.1	6.4	15.1	28.6	30.7	23.3	25.9	21.0
	2008	1083	23.0	7.4	0.0	35.0	34.6	0.0	21.2	13.4	30.4	23.0	21.5	25.3
Sweden	1995	244	12.3	2.4	6.2	22.0	57.2	5.9	4.2	47.0	20.8	12.3	12.4	12.2
	2008	1148	8.5	3.3	0.0	44.6	43.6	0.0	24.1	19.5	11.8	8.5	8.5	8.5
International Avg.	1995	322	28.8	3.7	6.6	16.0	44.9	4.1	7.3	33.5	39.1	28.8	29.0	28.5
	2008	1223	23.4	7.4	0.0	31.5	37.7	0.0	20.7	17.0	30.8	23.4	22.9	24.1

V1 = Percent scoring 1 or better V2 = Percent scoring 2 or better
Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.
Because of missing gender information, some totals may appear inconsistent.