

TRENDS IN INTERNATIONAL MATHEMATICS AND SCIENCE STUDY

# TIMSS



## TIMSS 2007 User Guide for the International Database

# Released Items

Mathematics – Fourth Grade



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Lynch School of Education, Boston College

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TIMSS 2007 User Guide for the International Database

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Item ID	Subject	Grade	Block	Block Seq	Content Domain	Cognitive Domain	Maximum Points	Key
M031286	M	4	M01	01	Number	Knowing	1	See scoring guide
M031106	M	4	M01	02	Number	Reasoning	1	See scoring guide
M031282	M	4	M01	03	Number	Reasoning	2	See scoring guide
M031227	M	4	M01	04	Number	Reasoning	1	See scoring guide
M031335	M	4	M01	05	Number	Reasoning	1	C
M031068	M	4	M01	06	Number	Reasoning	1	See scoring guide
M031299	M	4	M01	07	Number	Applying	1	See scoring guide
M031301	M	4	M01	08	Number	Applying	1	See scoring guide
M031271	M	4	M01	09	Geometric Shapes and Measures	Knowing	1	See scoring guide
M031134	M	4	M01	10	Data Display	Applying	1	See scoring guide
M031045	M	4	M01	11	Data Display	Reasoning	1	A
M041014	M	4	M02	01	Number	Knowing	1	D
M041039	M	4	M02	02	Number	Applying	1	B
M041278	M	4	M02	03	Number	Knowing	1	See scoring guide
M041006	M	4	M02	04	Number	Knowing	1	B
M041250	M	4	M02	05	Number	Knowing	1	See scoring guide
M041094	M	4	M02	06	Number	Applying	1	A
M041330	M	4	M02	07	Geometric Shapes and Measures	Applying	1	C
M041300A	M	4	M02	08	Geometric Shapes and Measures	Applying	1	See scoring guide
M041300B	M	4	M02	08	Geometric Shapes and Measures	Applying	1	See scoring guide
M041300C	M	4	M02	08	Geometric Shapes and Measures	Reasoning	1	See scoring guide
M041300D	M	4	M02	08	Geometric Shapes and Measures	Reasoning	1	See scoring guide
M041173	M	4	M02	09	Geometric Shapes and Measures	Knowing	1	C
M041274	M	4	M02	10	Data Display	Applying	1	See scoring guide
M041203	M	4	M02	11	Data Display	Reasoning	1	See scoring guide
M031235	M	4	M03	01	Number	Reasoning	1	See scoring guide
M031285	M	4	M03	02	Number	Reasoning	1	See scoring guide
M031050	M	4	M03	03	Number	Applying	1	A
M031258	M	4	M03	04	Number	Reasoning	1	See scoring guide
M031334	M	4	M03	05	Number	Applying	1	C
M031255	M	4	M03	06	Number	Applying	1	B
M031041	M	4	M03	07	Geometric Shapes and Measures	Applying	1	See scoring guide
MP31350	M	4	M03	08				
M031350A	M	4	M03	08	Geometric Shapes and Measures	Applying	1	See scoring guide
M031350B	M	4	M03	08	Geometric Shapes and Measures	Reasoning	1	See scoring guide
M031350C	M	4	M03	08	Geometric Shapes and Measures	Applying	1	See scoring guide
M031274	M	4	M03	09	Geometric Shapes and Measures	Applying	1	See scoring guide
M031240	M	4	M03	10	Data Display	Applying	1	See scoring guide
M041052	M	4	M04	01	Number	Knowing	1	B
M041056	M	4	M04	02	Number	Knowing	1	See scoring guide
M041069	M	4	M04	03	Number	Knowing	1	C
M041076	M	4	M04	04	Number	Knowing	1	See scoring guide
M041281	M	4	M04	05	Number	Applying	1	D

Item ID	Subject	Grade	Block	Block Seq	Content Domain	Cognitive Domain	Maximum Points	Key
M041164	M	4	M04	06	Geometric Shapes and Measures	Knowing	1	A
M041146	M	4	M04	07	Geometric Shapes and Measures	Applying	1	See scoring guide
M041152	M	4	M04	08	Geometric Shapes and Measures	Applying	1	C
M041258A	M	4	M04	09	Geometric Shapes and Measures	Reasoning	1	See scoring guide
M041258B	M	4	M04	09	Geometric Shapes and Measures	Reasoning	1	See scoring guide
M041131	M	4	M04	10	Geometric Shapes and Measures	Knowing	1	C
M041275	M	4	M04	11	Data Display	Applying	2	See scoring guide
M041186	M	4	M04	12	Data Display	Knowing	1	D
M041336	M	4	M04	13	Data Display	Reasoning	1	A
M031303	M	4	M05	01	Number	Applying	1	C
M031309	M	4	M05	02	Number	Applying	1	See scoring guide
M031245	M	4	M05	03	Number	Applying	1	D
M031242A	M	4	M05	04	Number	Applying	1	See scoring guide
M031242B	M	4	M05	04	Data Display	Knowing	1	See scoring guide
M031242C	M	4	M05	04	Data Display	Reasoning	1	B
M031247	M	4	M05	05	Number	Reasoning	2	See scoring guide
M031219	M	4	M05	06	Geometric Shapes and Measures	Knowing	1	B
M031173	M	4	M05	07	Number	Applying	1	D
M031085	M	4	M05	08	Geometric Shapes and Measures	Knowing	1	A
M031172	M	4	M05	09	Data Display	Applying	1	A
M031029	M	4	M07	01	Number	Knowing	1	A
M031030	M	4	M07	02	Number	Knowing	1	See scoring guide
M031332	M	4	M07	03	Number	Knowing	1	B
M031098	M	4	M07	04	Number	Applying	1	C
M031254	M	4	M07	05	Number	Applying	1	B
M031038	M	4	M07	06	Geometric Shapes and Measures	Knowing	1	D
M031276	M	4	M07	07	Number	Knowing	1	D
M031064	M	4	M07	08	Number	Reasoning	1	A
M031006	M	4	M07	09	Geometric Shapes and Measures	Knowing	1	B
M031330	M	4	M07	10	Geometric Shapes and Measures	Knowing	1	See scoring guide
M031351	M	4	M07	11	Geometric Shapes and Measures	Applying	1	D
M031135	M	4	M07	12	Data Display	Reasoning	1	B



**TIMSS2007****Mathematics****Fourth Grade**

M031286

In a car park, 762 cars were parked in 6 equal rows. How many cars were in each row?

Answer: \_\_\_\_\_

**Content Domain**

Number

**Cognitive Domain**

Knowing

**Maximum Points**

1

**Key**

See scoring guide

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Code	Response	Item: M031286
	<b>Correct Response</b>	
<b>10</b>	127	
	<b>Incorrect Response</b>	
<b>70</b>	4572	
<b>79</b>	Other incorrect (including crossed out/erased, stray marks, illegible, or off task)	
	<b>Nonresponse</b>	
<b>99</b>	Blank	

# TIMSS2007

## Mathematics Fourth Grade

$$\begin{array}{r} 942 \\ -5\text{?}7 \\ \hline 415 \end{array}$$

Mano did the subtraction problem above for homework but spilled some of his drink on it. One digit could not be read. His answer of 415 was correct. What is the missing digit?

Answer: \_\_\_\_\_

M031106

### Content Domain

Number

### Cognitive Domain

Reasoning

### Maximum Points

1

### Key

See scoring guide

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Code	Response	Item: M031106
	<b>Correct Response</b>	
10	2	
11	527	
	<b>Incorrect Response</b>	
70	3 OR 537	
79	Other incorrect (including crossed out/erased, stray marks, illegible, or off task)	
	<b>Nonresponse</b>	
99	Blank	

Last year there were 92 boys and 83 girls in Fairmont School. This year there are 210 students, and 97 are boys. How many more girls are there this year than last year? Show your work.

Answer: \_\_\_\_\_

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## Mathematics Fourth Grade

### Content Domain

Number

### Cognitive Domain

Reasoning

### Maximum Points

2

### Key

See scoring guide



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Code	Response	Item: M031282
	<b>Correct Response</b>	
20	30 with work shown	
	<b>Partial Response</b>	
10	30 with no work shown	
11	Correct method with computational error	
	<b>Incorrect Response</b>	
70	113	
79	Other incorrect (including crossed out/erased, stray marks, illegible or off task)	
	<b>Nonresponse</b>	
99	Blank	

M031227

△ 4	→ Sean's Rule →	□ 9
△ 5	→ Sean's Rule →	□ 11
△ 8	→ Sean's Rule →	□ 17
△ 11	→ Sean's Rule →	□ 23

Sean used the same rule to get the number in the □ from the number in the △. What was the rule?

Answer: \_\_\_\_\_

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Mathematics  
Fourth Grade

Content Domain  
Number

Cognitive Domain  
Reasoning

Maximum Points  
1

Key  
See scoring guide

Code	Response	Item: M031227
	<b>Correct Response</b>	
10	Double the number in the triangle and add 1 (e.g., double and add 1; multiply by 2 and add 1)	
19	Other correct, including adding the next highest number to the given number in the triangle (e.g., $4 + 5 = 9$ )	
	<b>Incorrect Response</b>	
79	Incorrect (including crossed out/erased, stray marks, illegible, or off task)	
	<b>Nonresponse</b>	
99	Blank	

M031335

The temperature at 7 a.m. one morning was  $12^{\circ}\text{C}$ . It increased by  $2^{\circ}\text{C}$  every hour until it reached  $20^{\circ}\text{C}$  at 11 a.m. What was the temperature at 9 a.m.?

- (A)  $14^{\circ}\text{C}$
- (B)  $15^{\circ}\text{C}$
- (C)  $16^{\circ}\text{C}$
- (D)  $17^{\circ}\text{C}$

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## Mathematics

### Fourth Grade

#### Content Domain

Number

#### Cognitive Domain

Reasoning

#### Maximum Points

1

#### Key

C



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**TIMSS2007****Mathematics****Fourth Grade**

Don, Rob, and Lynn walk home from school together. It takes them 25 minutes to walk to Lynn's house. Then it takes Don and Rob 10 minutes to get to Rob's house. From there it takes Don 5 minutes to walk home.

At what time must they leave school so that Don arrives home at 3:50 p.m.?

Answer: \_\_\_\_\_ p.m.

M031068

**Content Domain**

Number

**Cognitive Domain**

Reasoning

**Maximum Points**

1

**Key**

See scoring guide

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Code	Response	Item: M031068
	<b>Correct Response</b>	
10	3:10	
	<b>Incorrect Response</b>	
70	3:00	
79	Other incorrect (including crossed out/erased, stray marks, illegible, or off task)	
	<b>Nonresponse</b>	
99	Blank	

**TIMSS2007****Mathematics****Fourth Grade**

A bottle contains 1 liter of water. Tony pours 250 milliliters into a glass. How much water is left in the bottle?

Answer: \_\_\_\_\_ milliliters

M031299

**Content Domain**

Number

**Cognitive Domain**

Applying

**Maximum Points**

1

**Key**

See scoring guide

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Code	Response	Item: M031299
	<b>Correct Response</b>	
10	750	
	<b>Incorrect Response</b>	
79	Incorrect (including crossed out/erased, stray marks, illegible, or off task)	
	<b>Nonresponse</b>	
99	Blank	

Al wanted to find how much his cat weighed. He weighed himself and noted that the scale read 57 kg. He then stepped on the scale holding his cat and found that it read 62 kg.

What was the weight of the cat in kilograms?

Answer: \_\_\_\_\_ kilograms

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## Mathematics

## Fourth Grade

### Content Domain

Number

### Cognitive Domain

Applying

### Maximum Points

1

### Key

See scoring guide

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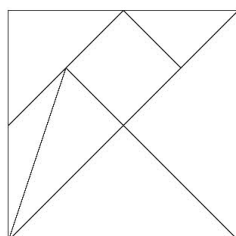
Code	Response	Item: M031301
	<b>Correct Response</b>	
10	5	
	<b>Incorrect Response</b>	
70	15	
79	Other incorrect (including crossed out/erased, stray marks, illegible, or off task)	
	<b>Nonresponse</b>	
99	Blank	



**TIMSS2007****Mathematics****Fourth Grade**

M031271

The square is cut into 7 pieces. Put an X on each of the 2 triangles that are the same size and shape.

**Content Domain**Geometric Shapes  
and Measures**Cognitive Domain**

Knowing

**Maximum Points**

1

**Key**

See scoring guide

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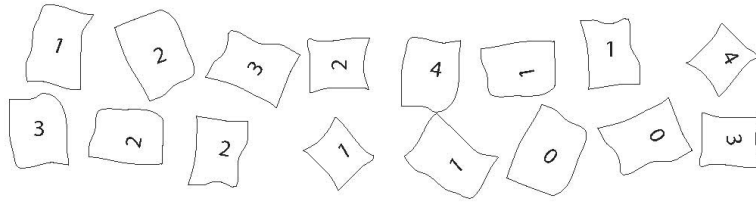
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Code	Response	Item: M031271
	<b>Correct Response</b>	
10	The two congruent triangles below the diagonal marked	
	<b>Incorrect Response</b>	
79	Incorrect (including crossed out/erased, stray marks, illegible, or off task)	
	<b>Nonresponse</b>	
99	Blank	

## TIMSS2007

## Mathematics

## Fourth Grade



Jasmin asked her classmates to write down how many brothers and sisters they had. She collected their answers and started to make a tally chart. She put in the two marks for the zeroes.

Complete Jasmin's tally chart.

Number of brothers and sisters	Tally
0	//
1	
2	
3	
4	

## Content Domain

Data Display

## Cognitive Domain

Applying

## Maximum Points

1

## Key

See scoring guide

M031134

Code	Response	Item: M031134										
	Correct Response											
10	Number of tally marks in table as listed below. <table><tr><th>Number</th><th>Number of Tally Marks</th></tr><tr><td>1</td><td>5 tally marks</td></tr><tr><td>2</td><td>4 tally marks</td></tr><tr><td>3</td><td>3 tally marks</td></tr><tr><td>4</td><td>2 tally marks</td></tr></table>		Number	Number of Tally Marks	1	5 tally marks	2	4 tally marks	3	3 tally marks	4	2 tally marks
Number	Number of Tally Marks											
1	5 tally marks											
2	4 tally marks											
3	3 tally marks											
4	2 tally marks											
	Incorrect Response											
70	One tally incorrect											
71	Two or more tallies incorrect											
79	Other incorrect (including crossed out/erased, stray marks, illegible, or off task)											
	Nonresponse											
99	Blank											

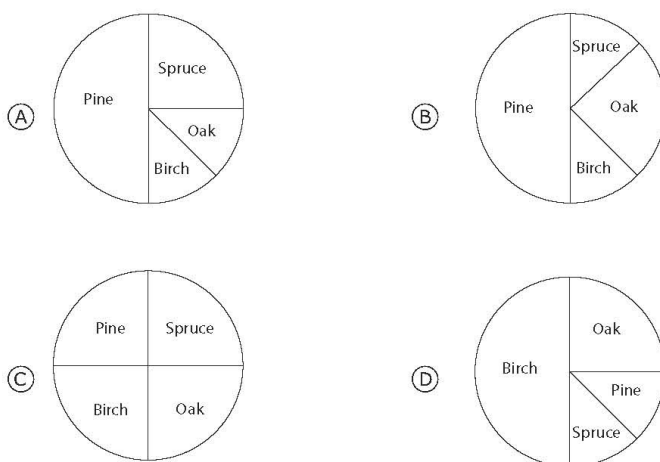
## TIMSS2007

## Mathematics

## Fourth Grade

Type of Tree	Number of Trees
Pine	200
Spruce	100
Oak	50
Birch	50

The table above shows the numbers of four types of trees growing in a park. Which of the following pie charts correctly displays the information shown in the table?



## Content Domain

## Data Display

## Cognitive Domain

## Reasoning

## Maximum Points

1

## Key

A

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## Mathematics Fourth Grade

### Content Domain

Number

### Cognitive Domain

Knowing

### Maximum Points

1

### Key

D

In which of the following are the numbers arranged from LARGEST to SMALLEST?

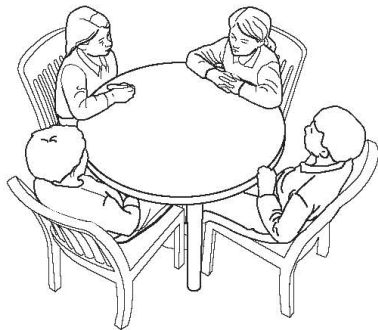
- (A) 36, 43, 66, 87
- (B) 66, 43, 36, 87
- (C) 87, 66, 36, 43
- (D) 87, 66, 43, 36

M041014

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One table can seat 4 people.

How would you find out how many tables are needed to seat 28 people?

- (A) Multiply 28 by 4.
- (B) Divide 28 by 4.
- (C) Subtract 4 from 28.
- (D) Add 4 to 28.

M041039

**TIMSS2007****Mathematics****Fourth Grade****Content Domain**

Number

**Cognitive Domain**

Applying

**Maximum Points**

1

**Key**

B

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M041278

Multiply:  
 $53 \times 26$

Answer: \_\_\_\_\_

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## Mathematics Fourth Grade

### Content Domain

Number

### Cognitive Domain

Knowing

### Maximum Points

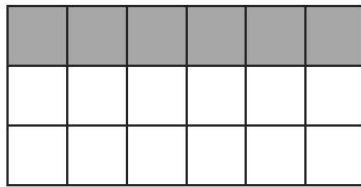
1

### Key

See scoring guide

Code	Response	Item: M041278
	<b>Correct Response</b>	
10	1378	
	<b>Incorrect Response</b>	
70	118	
79	Other incorrect (including crossed out, erased, stray marks, illegible, or off task)	
	<b>Nonresponse</b>	
99	Blank	

What fraction of this rectangle is shaded?



- Ⓐ  $\frac{1}{4}$
- Ⓑ  $\frac{1}{3}$
- Ⓒ  $\frac{6}{12}$
- Ⓓ  $\frac{2}{3}$

M041006

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## Mathematics

## Fourth Grade

**Content Domain**

Number

**Cognitive Domain**

Knowing

**Maximum Points**

1

**Key**

B



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Subtract:

$$5.3 - 3.8$$

Answer: \_\_\_\_\_

**TIMSS2007****Mathematics****Fourth Grade****Content Domain**

Number

**Cognitive Domain**

Knowing

**Maximum Points**

1

**Key**

See scoring guide

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Code	Response	Item: M041250
	<b>Correct Response</b>	
10	1.5	
	<b>Incorrect Response</b>	
70	2.5	
71	15	
79	Other incorrect (including crossed out, erased, stray marks, illegible, or off task)	
	<b>Nonresponse</b>	
99	Blank	

**TIMSS2007****Mathematics****Fourth Grade****Content Domain**

Number

**Cognitive Domain**

Applying

**Maximum Points**

1

**Key**

A

Bob has 10 zeds. For lunch, he buys a bottle of fruit juice for 2.50 zeds and a sandwich for 3.85 zeds. How much money does Bob have left after he has paid for his lunch?

- (A) 3.65 zeds
- (B) 4.75 zeds
- (C) 6.35 zeds
- (D) 16.35 zeds

M041094

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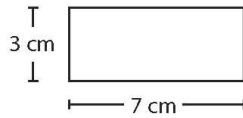
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## TIMSS2007

## Mathematics

## Fourth Grade



What is the perimeter of this rectangle?

- (A) 7 cm
- (B) 10 cm
- (C) 20 cm
- (D) 21 cm

M041330

## Content Domain

Geometric Shapes  
and Measures

## Cognitive Domain

Applying

## Maximum Points

1

## Key

C

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## TIMSS2007

## Mathematics

## Fourth Grade

**Geometry Tiles**

Instruction:

For this item, you have been given a piece of cardboard with 6 tiles like the ones shown below. Take the piece of cardboard, and punch out the 6 tiles.

If you do not have the piece of cardboard, raise your hand.

4 Triangle Tiles



2 Trapezoid Tiles

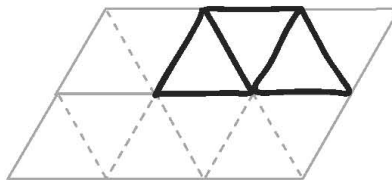


These tiles can be used to make new figures. One problem has been done for you

USE: 3 Triangle Tiles

MAKE: A trapezoid

SHOW: Draw it on the grid.



Now try these problems.

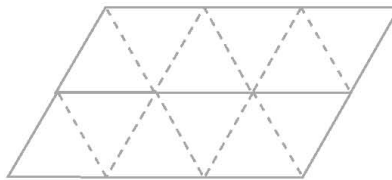
A.

USE: 1 Triangle Tile and

1 Trapezoid Tile

MAKE: A 4-sided figure

SHOW: Draw it on the grid.

**Content Domain**Geometric Shapes  
and Measures**Cognitive Domain**

Applying

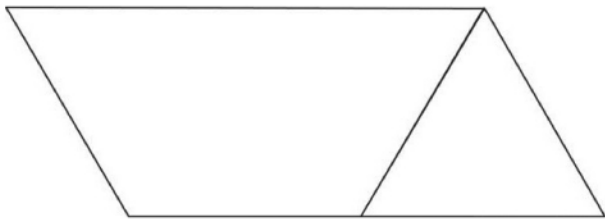
**Maximum Points**

1

**Key**

See scoring guide

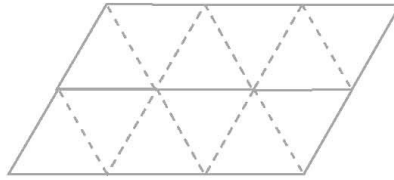
M041300\_1

Code	Response	Item: M041300A
	<b>Correct Response</b>	
10	Correct 4-sided figure turned in any position	
		
	<b>Incorrect Response</b>	
70	Makes a larger triangle	
71	Makes a 4-sided figure, but not using the specified tiles, e.g., a larger parallelogram.	
79	Other incorrect (including crossed out, erased, stray marks, illegible, or off task)	
	<b>Nonresponse</b>	
99	Blank	

**TIMSS2007****Mathematics**  
**Fourth Grade**

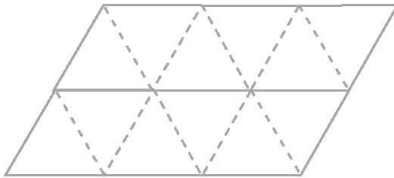
B.

USE: 2 Trapezoid Tiles  
 MAKE: A 6-sided figure  
 SHOW: Draw it on the grid.



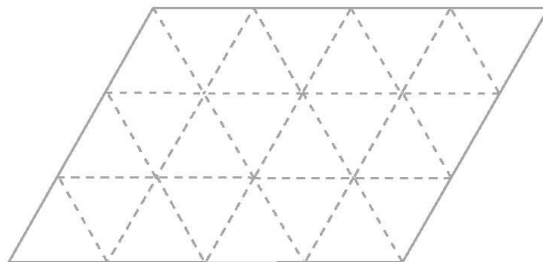
C.

USE: 2 Trapezoid Tiles  
 MAKE: A 6-sided figure that is  
 not the same shape as  
 the one you made in  
 Part B  
 SHOW: Draw it on the grid.



D.

USE: 2 Triangle Tiles and  
 1 Trapezoid Tile  
 MAKE: A 7-sided figure  
 SHOW: Draw it on the grid.

**Content Domain**Geometric Shapes  
and Measures**Cognitive Domain**

Applying

**Maximum Points**

1

**Key**

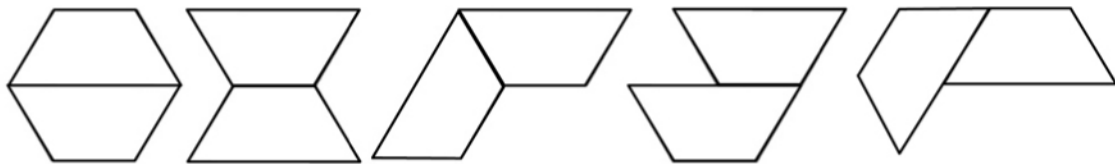
See scoring guide

M041300\_2

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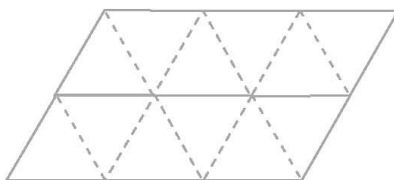
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Code	Response	Item: M041300B
	<b>Correct Response</b>	
10	Makes a correct 6-sided figure, e.g., one of those shown below (in any orientation).	
		
	<b>Incorrect Response</b>	
79	Incorrect (including crossed out, erased, stray marks, illegible, or off task)	
	<b>Nonresponse</b>	
99	Blank	

**TIMSS2007****Mathematics**  
**Fourth Grade**

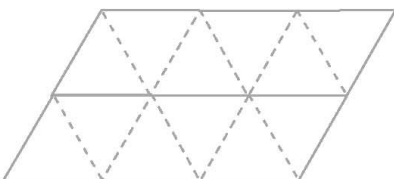
B.

USE: 2 Trapezoid Tiles  
 MAKE: A 6-sided figure  
 SHOW: Draw it on the grid.



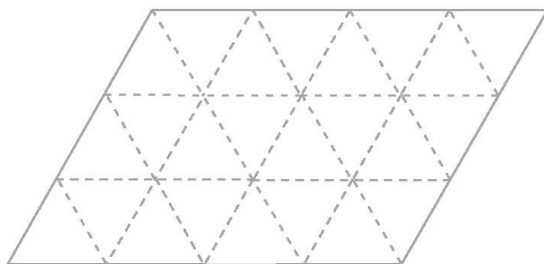
C.

USE: 2 Trapezoid Tiles  
 MAKE: A 6-sided figure that is not the same shape as the one you made in Part B  
 SHOW: Draw it on the grid.



D.

USE: 2 Triangle Tiles and 1 Trapezoid Tile  
 MAKE: A 7-sided figure  
 SHOW: Draw it on the grid.

**Content Domain**

Geometric Shapes and Measures

**Cognitive Domain**

Reasoning

**Maximum Points**

1

**Key**

See scoring guide

M041300\_2

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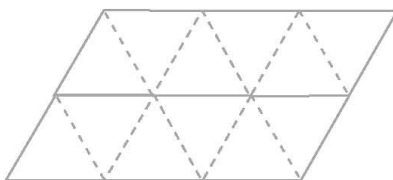
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Code	Response	Item: M041300C
	<b>Correct Response</b>	
<b>10</b>	Any of four figures (6-sided) that was not used in part B.	
	<b>Incorrect Response</b>	
<b>70</b>	Repeats a correct figure already given in part B	
<b>79</b>	Other incorrect (including crossed out, erased, stray marks, illegible, or off task)	
	<b>Nonresponse</b>	
<b>99</b>	Blank	

**TIMSS2007****Mathematics**  
**Fourth Grade**

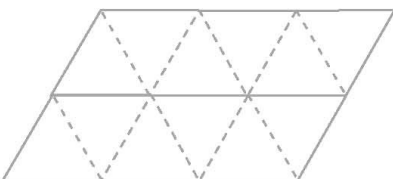
B.

USE: 2 Trapezoid Tiles  
 MAKE: A 6-sided figure  
 SHOW: Draw it on the grid.



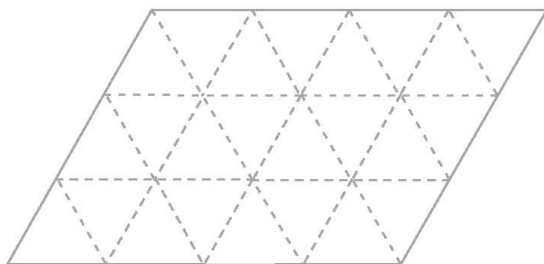
C.

USE: 2 Trapezoid Tiles  
 MAKE: A 6-sided figure that is  
 not the same shape as  
 the one you made in  
 Part B  
 SHOW: Draw it on the grid.



D.

USE: 2 Triangle Tiles and  
 1 Trapezoid Tile  
 MAKE: A 7-sided figure  
 SHOW: Draw it on the grid.

**Content Domain**Geometric Shapes  
and Measures**Cognitive Domain**

Reasoning

**Maximum Points**

1

**Key**

See scoring guide

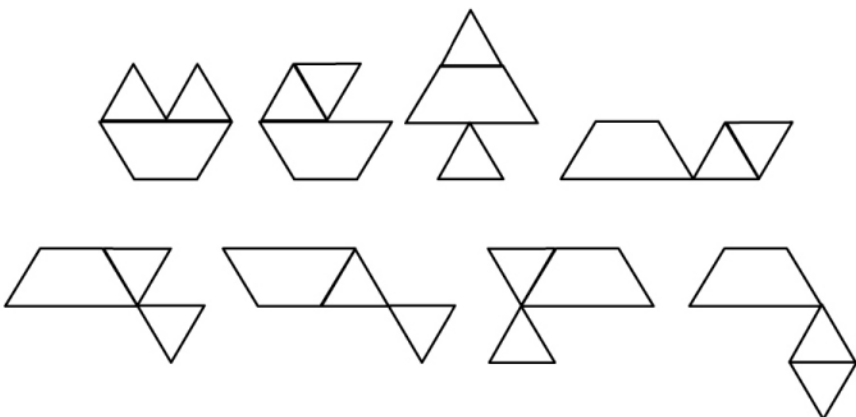
M041300\_2

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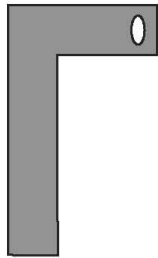


Code	Response	Item: M041300D
	<b>Correct Response</b>	
10	Makes a correct 7-sided figure, e.g., one of those shown below (in any orientation).	
		
	<b>Incorrect Response</b>	
79	Incorrect (including crossed out, erased, stray marks, illegible, or off task)	
	<b>Nonresponse</b>	
99	Blank	

## TIMSS2007

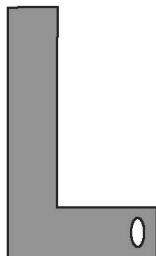
## Mathematics

## Fourth Grade

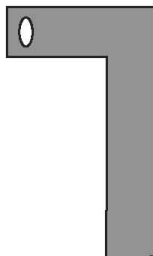


The shape above is rotated by  $90^\circ$  clockwise. Which shape is the result?

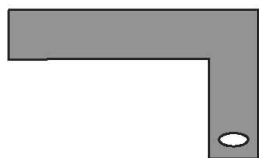
(A)



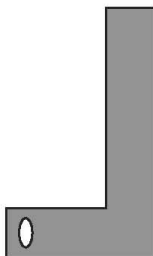
(B)



(C)



(D)



M041173

## Content Domain

Geometric Shapes  
and Measures

## Cognitive Domain

Knowing

## Maximum Points

1

## Key

C

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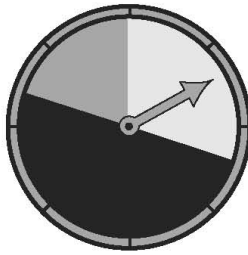


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## TIMSS2007

Mathematics  
Fourth Grade

A spinner can land on 3 different colors. Here are the results after 100 spins.

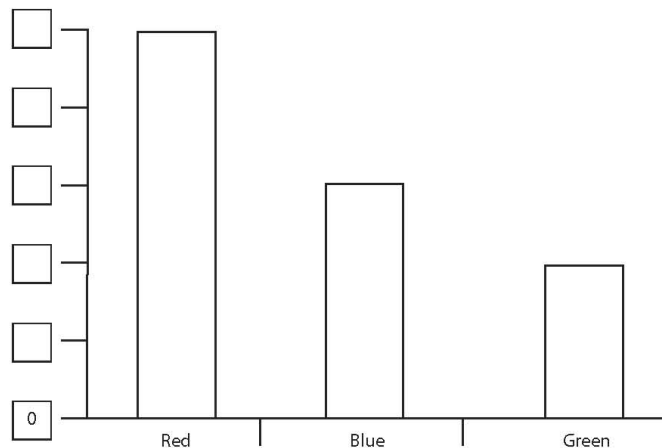


Spinner Results

Red	50
Blue	30
Green	20

Jenny starts to draw this graph to show the result. Help Jenny by writing the correct numbers in the boxes to complete the scale.

Bar graph



M041274

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## Content Domain

Data Display

## Cognitive Domain

Applying

## Maximum Points

1

## Key

See scoring guide

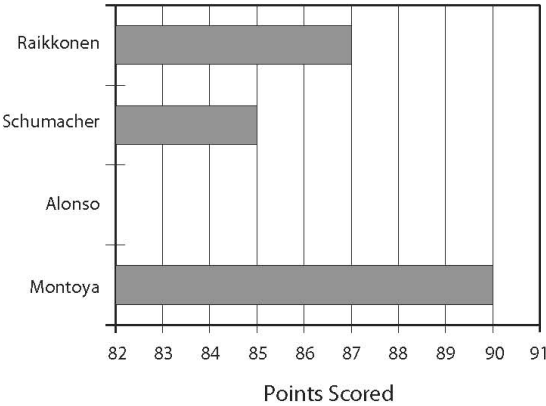


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Code	Response	Item: M041274
	<b>Correct Response</b>	
<b>10</b>	All correct numbers shown: 50 40 30 20 10	
	<b>Incorrect Response</b>	
<b>70</b>	Only 20, 30, 50 correctly entered on the scale.	
<b>79</b>	Incorrect (including crossed out, erased, stray marks, illegible, or off task)	
	<b>Nonresponse</b>	
<b>99</b>	Blank	

M041203

This graph shows the points obtained by 4 drivers in the car racing championship. Montoya is in first place. Alonso is in third place. Draw a bar which shows how many points Alonso has scored.



# TIMSS2007

## Mathematics Fourth Grade

**Content Domain**  
Data Display

**Cognitive Domain**  
Reasoning

**Maximum Points**  
1

**Key**  
See scoring guide

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Code	Response	Item: M041203
	<b>Correct Response</b>	
10	Bar at 86	
	<b>Incorrect Response</b>	
70	Bar between 85-87 exclusive but not at 86	
79	Other Incorrect (including crossed out, erased, stray marks, illegible, or off task)	
	<b>Nonresponse</b>	
99	Blank	

M031235

A group of 8 children have 74 sweets altogether. How many more sweets are needed for the children to be able to share them equally?

Answer: \_\_\_\_\_

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# TIMSS2007

## Mathematics Fourth Grade

### Content Domain

Number

### Cognitive Domain

Reasoning

### Maximum Points

1

### Key

See scoring guide



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Code	Response	Item: M031235
	<b>Correct Response</b>	
10	6 or any number other than 6 that added to 74 gives a multiple of 8 (e.g., 14, 22)	
	<b>Incorrect Response</b>	
70	9.25, $9\frac{1}{4}$ , or 9 with 2 remainder	
71	2 (remainder) or 9	
79	Other incorrect (including crossed out/erased, stray marks, illegible, or off task)	
	<b>Nonresponse</b>	
99	Blank	



**TIMSS2007****Mathematics****Fourth Grade**

M031285

Two boys went running. For every 2 km that Fred ran, Alan ran 3 km. Fred ran 6 km. How far did Alan run?

Answer: \_\_\_\_\_ km

**Content Domain**

Number

**Cognitive Domain**

Reasoning

**Maximum Points**

1

**Key**

See scoring guide

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Code	Response	Item: M031285
	<b>Correct Response</b>	
10	9	
	<b>Incorrect Response</b>	
70	7	
79	Other incorrect (including crossed out/erased, stray marks, illegible, or off task)	
	<b>Nonresponse</b>	
99	Blank	

**TIMSS2007****Mathematics****Fourth Grade**

M031050

Ken measured the length of a blackboard using a 30 cm ruler. The blackboard was 6 cm less than 9 times the length of the ruler. What is the length of the blackboard?

- (A) 264 cm
- (B) 270 cm
- (C) 276 cm
- (D) 279 cm

**Content Domain**

Number

**Cognitive Domain**

Applying

**Maximum Points**

1

**Key**

A

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Mathematics

Fourth Grade

Content Domain

Number

Cognitive Domain

Reasoning

Maximum Points

1

Key

See scoring guide

Ann uses a rule to get her number from Mary's number, as shown in the table.

Mary's Number	Ann's Number
1	3
2	6
4	12
6	18

What is the rule Ann uses to get her number?

M031258



Code	Response	Item: M031258
	<b>Correct Response</b>	
10	“Multiply by 3” or other fully correct	
	<b>Incorrect Response</b>	
70	Multiply without specifying by what	
79	Other incorrect (including crossed out/erased, stray marks, illegible, or off task)	
	<b>Nonresponse</b>	
99	Blank	

2, 5, 11, 23, ...

Starting the pattern at 2, which of these rules would give each of the terms in the number pattern above?

- Ⓐ Add 1 to the previous term and then multiply by 2.
- Ⓑ Multiply the previous term by 3 and then subtract 1.
- Ⓒ Multiply the previous term by 2 and then add 1.
- Ⓓ Subtract 1 from the previous term and then multiply by 3.

M031334

**TIMSS2007****Mathematics****Fourth Grade****Content Domain**

Number

**Cognitive Domain**

Applying

**Maximum Points**

1

**Key**

C

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## TIMSS2007

## Mathematics

## Fourth Grade

$$64 \div \blacksquare = \blacksquare$$

In this number sentence,  $\blacksquare$  stands for the same number. What number does  $\blacksquare$  stand for?

- (A) 4
- (B) 8
- (C) 16
- (D) 32

M031255

## Content Domain

Number

## Cognitive Domain

Applying

## Maximum Points

1

## Key

B

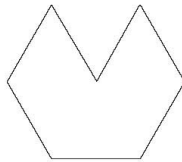
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**TIMSS2007****Mathematics****Fourth Grade**

How many triangular tiles like this are needed to cover the figure below?



Answer: \_\_\_\_\_

M031041

**Content Domain**Geometric Shapes  
and Measures**Cognitive Domain**

Applying

**Maximum Points**

1

**Key**

See scoring guide

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Code	Response	Item: M031041
	<b>Correct Response</b>	
10	5	
	<b>Incorrect Response</b>	
70	6	
79	Other incorrect (including crossed out/erased, stray marks, illegible, or off task)	
	<b>Nonresponse</b>	
99	Blank	

## TIMSS2007

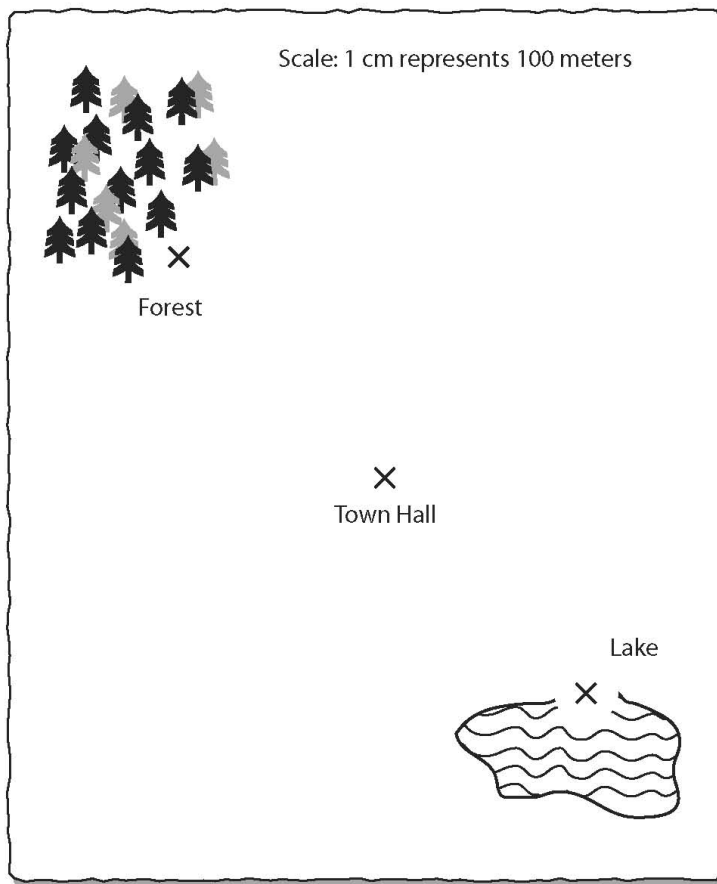
# Mathematics

## Fourth Grade

For this item, you have been given a cardboard ruler. If you do not have the cardboard ruler raise your hand. Use the map below and your ruler to answer this set of questions.

Marytown is a new town. The people of Marytown are planning their new town. They decided to put the town hall halfway between the lake and the forest, as shown on the map below. They made their measurements from the X's.

### Marytown



This Marytown question continues on the next page. ➡

### Content Domain

### Cognitive Domain

### Maximum Points

### Key

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**TIMSS2007****Mathematics****Fourth Grade****Content Domain**Geometric Shapes  
and Measures**Cognitive Domain**

Applying

**Maximum Points**

1

**Key**

See scoring guide

Add a park, a library, and a school to the map of Marytown using the following information.

- A. The **park** should be 200 meters from the lake so people can go fishing and swimming. On the map, mark with an X where you would put the **park** and write **park** below the X.
- B. The **library** should be at least 300 meters but no more than 400 meters from the town hall. On the map, mark with an X where you would put the **library** and write **library** below the X.
- C. The **school** should be halfway between the park and the library. On the map, mark with an X where you would put the **school** and write **school** below the X.

End of Marytown section. ●

M031350

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Code	Response	Item: M031350A
	<b>Correct Response</b>	
<b>10</b>	Park 2.0 cm from lake, measured from X to X (+/- 2 mm)	
	<b>Incorrect Response</b>	
<b>79</b>	Incorrect (including crossed out/erased, stray marks, illegible, or off task)	
	<b>Nonresponse</b>	
<b>99</b>	Blank	

**TIMSS2007****Mathematics****Fourth Grade**

Add a park, a library, and a school to the map of Marytown using the following information.

- A. The **park** should be 200 meters from the lake so people can go fishing and swimming. On the map, mark with an X where you would put the **park** and write **park** below the X.
- B. The **library** should be at least 300 meters but no more than 400 meters from the town hall. On the map, mark with an X where you would put the **library** and write **library** below the X.
- C. The **school** should be halfway between the park and the library. On the map, mark with an X where you would put the **school** and write **school** below the X.

End of Marytown section. ●

M031350

**Content Domain**

Geometric Shapes  
and Measures

**Cognitive Domain**

Reasoning

**Maximum Points**

1

**Key**

See scoring guide

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**Note:** Park and library need not to be in a straight line.

Code	Response	Item: M031350B
	<b>Correct Response</b>	
10	Library between 2.8 cm and 4.2 cm from town hall, measured from X to X	
	<b>Incorrect Response</b>	
70	Library less than 2.8 cm from town hall, measured from X to X	
71	Library more than 4.2 cm from town hall, measured from X to X	
79	Other incorrect (including crossed out/erased, stray marks, illegible, or off task)	
	<b>Nonresponse</b>	
99	Blank	

M031350

Add a park, a library, and a school to the map of Marytown using the following information.

- A. The **park** should be 200 meters from the lake so people can go fishing and swimming. On the map, mark with an X where you would put the **park** and write **park** below the X.
- B. The **library** should be at least 300 meters but no more than 400 meters from the town hall. On the map, mark with an X where you would put the **library** and write **library** below the X.
- C. The **school** should be halfway between the park and the library. On the map, mark with an X where you would put the **school** and write **school** below the X.

End of Marytown section.



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# TIMSS2007

## Mathematics Fourth Grade

### Content Domain

Geometric Shapes and Measures

### Cognitive Domain

Applying

### Maximum Points

1

### Key

See scoring guide



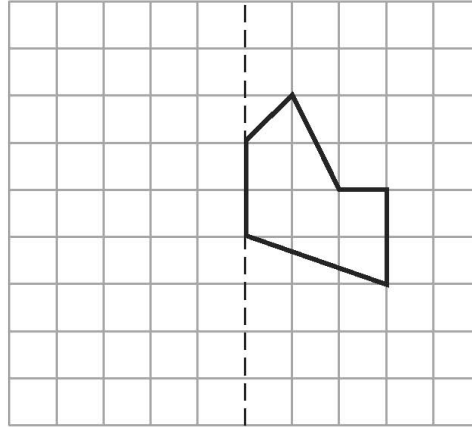
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**Note:** Park, library, and school need not to be in a straight line.

Code	Response	Item: M031350C
	<b>Correct Response</b>	
10	School equidistant from park and library, X to X, measures to differ no more than 4mm	
	<b>Incorrect Response</b>	
70	School is not equidistant (+/- 2 mm) from park and library	
79	Other incorrect (including crossed out/erased, stray marks, illegible, or off task)	
	<b>Nonresponse</b>	
99	Blank	



On the grid below, draw the reflection of the shape in the dotted line of symmetry.



M031274

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# TIMSS2007

## Mathematics

### Fourth Grade

#### Content Domain

Geometric Shapes and Measures

#### Cognitive Domain

Applying

#### Maximum Points

1

#### Key

See scoring guide



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Code	Response	Item: M031274
	<b>Correct Response</b>	
<b>10</b>	Image correctly drawn	
	<b>Incorrect Response</b>	
<b>70</b>	One or more of image lines drawn correctly, but image not completely correct	
<b>71</b>	Attempt to sketch an image under a transformation other than reflection (e.g., translation of image)	
<b>79</b>	Other incorrect (including crossed out/erased, stray marks, illegible, or off task)	
	<b>Nonresponse</b>	
<b>99</b>	Blank	

Mathematics  
Fourth Grade

Content Domain  
Data Display

Cognitive Domain  
Applying

Maximum Points  
1

Key  
See scoring guide

There were 5 children at the park. Some were wearing hats and some were not.

Girls	Boys
Maria was wearing a hat	Peter was wearing a hat
Megan was not wearing a hat	Chan was not wearing a hat
Mandy was not wearing a hat	

Complete the table to show the number of boys and girls that were wearing hats and were not wearing hats.

	Hat	No hat
Boys		
Girls		

Code	Response	Item: M031240
	<b>Correct Response</b>	
10	Boys: 1 hat, 1 no hat } or equivalent tallies Girls: 1 hat, 2 no hat }	
	<b>Incorrect Response</b>	
70	Names of boys and girls correctly placed in table	
79	Other Incorrect (including crossed out/erased, stray marks, illegible, or off task)	
	<b>Nonresponse</b>	
99	Blank	

**TIMSS2007**

**Mathematics**  
**Fourth Grade**

M041052

Which number equals 3 ones + 2 tens + 4 hundreds?

- (A) 432
- (B) 423
- (C) 324
- (D) 234

**Content Domain**

Number

**Cognitive Domain**

Knowing

**Maximum Points**

1

**Key**

B

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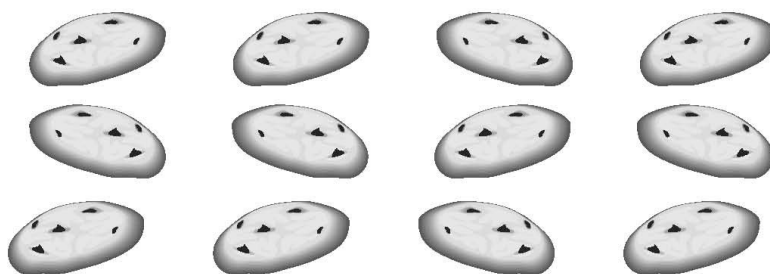
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## TIMSS2007

## Mathematics

## Fourth Grade

M041056



There are 12 cookies. Draw a circle around  $\frac{1}{3}$  of the cookies.

## Content Domain

Number

## Cognitive Domain

Knowing

## Maximum Points

1

## Key

See scoring guide

Code	Response	Item: M041056
	<b>Correct Response</b>	
10	Draws a circle around any 4 cookies or draws separate circles around 4 cookies or draws 3 circles, each circle enclosing 4 cookies	
	<b>Incorrect Response</b>	
70	Draws a circle around 3 cookies	
79	Other incorrect (including crossed out, erased, stray marks, illegible, or off task)	
	<b>Nonresponse</b>	
99	Blank	

## TIMSS2007

## Mathematics

## Fourth Grade

Which fraction is equal to  $\frac{2}{3}$ ?

- (A)  $\frac{3}{4}$
- (B)  $\frac{4}{9}$
- (C)  $\frac{4}{6}$
- (D)  $\frac{3}{2}$

M041069

## Content Domain

Number

## Cognitive Domain

Knowing

## Maximum Points

1

## Key

C

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Joe spent  $\frac{3}{10}$  of his money on a pen and  $\frac{5}{10}$  of it on a book.

What fraction of his money did he spend?

Answer: \_\_\_\_\_

**TIMSS2007****Mathematics**  
**Fourth Grade****Content Domain**

Number

**Cognitive Domain**

Knowing

**Maximum Points**

1

**Key**

See scoring guide

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Code	Response	Item: M041076
	<b>Correct Response</b>	
<b>10</b>	$\frac{8}{10}$ or equivalent	
	<b>Incorrect Response</b>	
<b>70</b>	$\frac{8}{20}$	
<b>79</b>	Other incorrect (including crossed out, erased, stray marks, illegible, or off task)	
	<b>Nonresponse</b>	
<b>99</b>	Blank	

M041281

Layne had 32 pencils and 4 boxes for the pencils.  
He put the same number of pencils into each box.  
Which number sentence describes how many pencils he put into each box?

- (A)  $32 + 4 = \square$
- (B)  $32 - 4 = \square$
- (C)  $32 \times 4 = \square$
- (D)  $32 \div 4 = \square$

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**TIMSS2007**

## Mathematics

### Fourth Grade

#### Content Domain

Number

#### Cognitive Domain

Applying

#### Maximum Points

1

#### Key

D



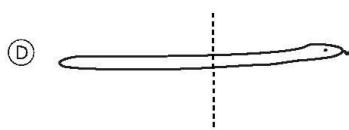
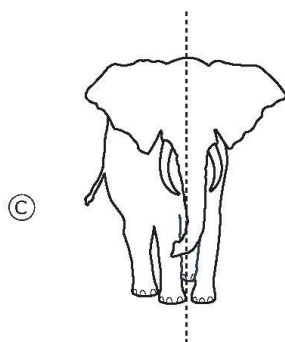
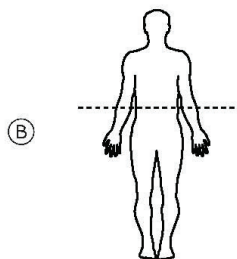
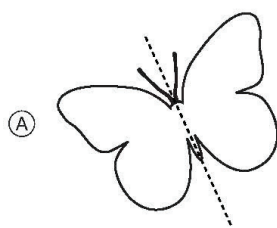
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## TIMSS2007

## Mathematics

## Fourth Grade

In which of these drawings is the dotted line a line of symmetry?



## Content Domain

Geometric Shapes  
and Measures

## Cognitive Domain

Knowing

## Maximum Points

1

## Key

A

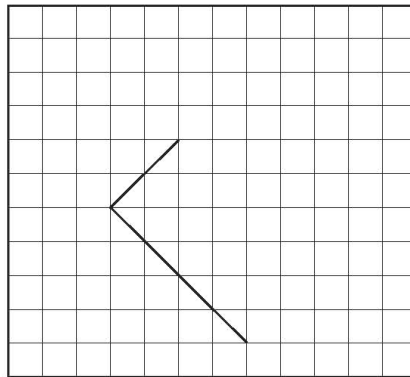
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M041146

Here are two sides of a rectangle. Draw the other two sides.



**TIMSS2007**

## Mathematics

### Fourth Grade

#### Content Domain

Geometric Shapes  
and Measures

#### Cognitive Domain

Applying

#### Maximum Points

1

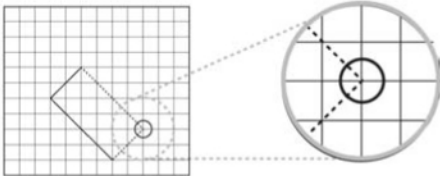
#### Key

See scoring guide

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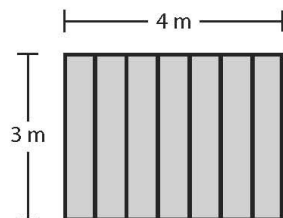
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Code	Response	Item: M041146
	<b>Correct Response</b>	
10	Correct rectangle drawn with the fourth vertex lying within the circle, as shown below. Note: The center of the circle is the correct position for the vertex. The radius of the circle is half the length of a square on the grid.	
		
	<b>Incorrect Response</b>	
79	Incorrect (including crossed out, erased, stray marks, illegible, or off task)	
	<b>Nonresponse</b>	
99	Blank	

## TIMSS2007

## Mathematics

## Fourth Grade



Patrick is painting one side of a fence. The fence is 4 meters long and 3 meters high. What is the area that Patrick has to paint?

- (A) 4 square meters
- (B) 7 square meters
- (C) 12 square meters
- (D) 14 square meters

M041152

## Content Domain

Geometric Shapes  
and Measures

## Cognitive Domain

Applying

## Maximum Points

1

## Key

C

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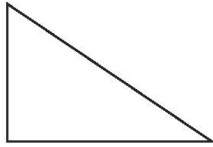
## TIMSS2007

## Mathematics

## Fourth Grade

Two shapes are shown below. Describe one way they are the same and one way they are different.

Shape P



Shape Q



A. Same

B. Different

M041258

## Content Domain

Geometric Shapes  
and Measures

## Cognitive Domain

Reasoning

## Maximum Points

1

## Key

See scoring guide

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Code	Response	Item: M041258A
	<b>Correct Response</b>	
<b>10</b>	Both are triangles/ both have 3 sides/ both have same number of sides/ both have 3 angles/ both have 3 corners or equivalent statements	
	<b>Incorrect Response</b>	
<b>70</b>	They are the same shape.	
<b>71</b>	Both have straight sides.	
<b>79</b>	Other incorrect (including crossed out, erased, stray marks, illegible, or off task)	
	<b>Nonresponse</b>	
<b>99</b>	Blank	

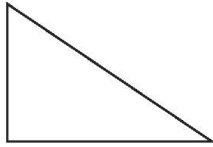
## TIMSS2007

## Mathematics

## Fourth Grade

Two shapes are shown below. Describe one way they are the same and one way they are different.

Shape P



Shape Q



A. Same

B. Different

M041258

## Content Domain

Geometric Shapes  
and Measures

## Cognitive Domain

Reasoning

## Maximum Points

1

## Key

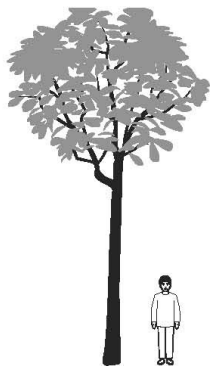
See scoring guide

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Code	Response	Item: M041258B
	<b>Correct Response</b>	
<b>10</b>	One has a right angle, one does not.	
<b>11</b>	One has 2 sides/ angles the same size/is isocles/has a line of symmetry (the other does not)	
<b>12</b>	One is bigger/longer/wider/has a larger area than the other or equivalent statement about size.	
	<b>Incorrect Response</b>	
<b>70</b>	They are different shapes/ they are not the same shape.	
<b>79</b>	Other incorrect (including crossed out, erased, stray marks, illegible, or off task)	
	<b>Nonresponse</b>	
<b>99</b>	Blank	



The man in the picture is 2 meters tall. Estimate the height of the tree.

- (A) 4 meters
- (B) 6 meters
- (C) 8 meters
- (D) 10 meters

M041131

**TIMSS2007****Mathematics****Fourth Grade****Content Domain****Geometric Shapes  
and Measures****Cognitive Domain****Knowing****Maximum Points**

1

**Key**

C

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Mathematics  
Fourth Grade

Content Domain

Data Display

Cognitive Domain

Applying

Maximum Points

2

Key

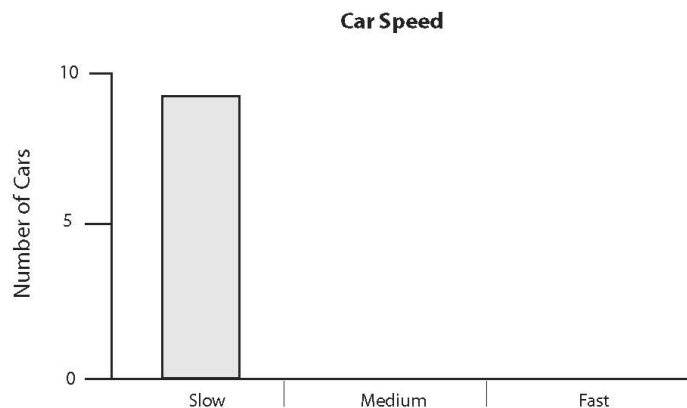
See scoring guide

Several students were collecting information about how fast cars were driving by their school. The table below shows the results for 20 cars.

Car	Slow	Medium	Fast
1		X	
2	X		
3	X		
4			X
5			X
6	X		
7		X	
8		X	
9	X		
10	X		
11	X		
12		X	
13	X		
14			X
15			X
16	X		
17		X	
18	X		
19		X	
20			X

To make the results easier to read, the students started to put the information into the bar graph.

Complete the bar graph.



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Code	Response	Item: M041275
	<b>Correct Response</b>	
20	Both bars correctly drawn. Bar for fast is between 4 and 6 (inclusive). Bar for medium is taller than bar for fast but less than 7.5 (exclusive).	
	<b>Partially Correct Response</b>	
10	Only 1 bar correctly drawn	
	<b>Incorrect Response</b>	
79	Incorrect (including crossed out, erased, stray marks, illegible, or off task)	
	<b>Nonresponse</b>	
99	Blank	

## TIMSS2007

Mathematics  
Fourth Grade

The graph shows the number of apples John picked each day.

each  stands for 10 apples

Monday	
Tuesday	
Wednesday	
Thursday	

On which day did John pick 5 apples?

- (A) Monday
- (B) Tuesday
- (C) Wednesday
- (D) Thursday

M041186

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## Content Domain

Data Display

## Cognitive Domain

Knowing

## Maximum Points

1

## Key

D



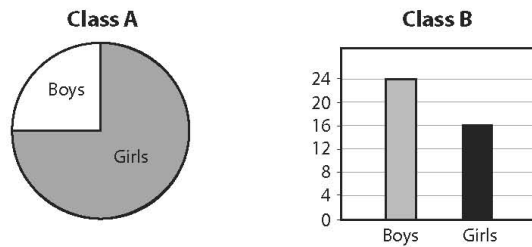
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## TIMSS2007

## Mathematics

## Fourth Grade

Class A and B each have 40 students.



There are more girls in Class A than in Class B. How many more?

- (A) 14
- (B) 16
- (C) 24
- (D) 30

M041336

## Content Domain

Data Display

## Cognitive Domain

Reasoning

## Maximum Points

1

## Key

A

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**TIMSS2007****Mathematics****Fourth Grade**

M031303

There are 9 rows of chairs. There are 15 chairs in each row. Which of these gives the total number of chairs?

- (A)  $15 \div 9$
- (B)  $15 - 9$
- (C)  $15 \times 9$
- (D)  $15 + 9$

**Content Domain**

Number

**Cognitive Domain**

Applying

**Maximum Points**

1

**Key**

C

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# TIMSS2007

## Mathematics

## Fourth Grade

A piece of rope 204 cm long is cut into 4 equal pieces. What is the length of each piece?

Answer: \_\_\_\_\_ cm

M031309

### Content Domain

Number

### Cognitive Domain

Applying

### Maximum Points

1

### Key

See scoring guide

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Code	Response	Item: M031309
	<b>Correct Response</b>	
10	51	
	<b>Incorrect Response</b>	
79	Incorrect (including crossed out/erased, stray marks, illegible, or off task)	
	<b>Nonresponse</b>	
99	Blank	

**TIMSS2007****Mathematics****Fourth Grade**

$$12 \div 3 = \blacksquare \div 2$$

In this number sentence, what number does  $\blacksquare$  stand for?

- (A) 2
- (B) 4
- (C) 6
- (D) 8

M031245

**Content Domain**

Number

**Cognitive Domain**

Applying

**Maximum Points**

1

**Key**

D

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Mathematics  
Fourth Grade

Posters for two sports clubs that rent bikes are shown below.


Mountain Bike Rentals

8 zeds for 1st hour  
3 zeds for each additional hour



Roadrace Bike Rentals

10 zeds for 1st hour  
2 zeds for each additional hour



A. Use the information in the posters to complete the tables.

Mountain Bike Rentals		Roadrace Bike Rentals	
Hours	Cost (zeds)	Hours	Cost (zeds)
1	8	1	10
2	11	2	12
3		3	
4		4	
5		5	
6		6	

B. For what number of hours are the rental costs the same at the two clubs?

Answer: \_\_\_\_\_

C. From which club does it cost less to rent a bike for 12 hours?

- (A) Mountain Bike Rentals
- (B) Roadrace Bike Rentals
- (C) They are both the same
- (D) It cannot be worked out

Content Domain  
Number

Cognitive Domain  
Applying

Maximum Points  
1



Key  
See scoring guide

Code	Response	Item: M031242A			
	Correct Response				
10	Table completed correctly to 6 hours:	3 hours	14 zeds	3 hours	14 zeds
		4	17	4	16
		5	20	5	18
		6	23	6	20
	Incorrect Response				
70	One or more entries for Mountain Club incorrect; Roadrace Club entries all correct				
71	One or more entries for Roadrace Club incorrect; Mountain Club entries all correct				
79	Other incorrect (including crossed out/erased, stray marks, illegible or off task).				
	Nonresponse				
99	Blank				

## TIMSS2007

Mathematics  
Fourth Grade

Posters for two sports clubs that rent bikes are shown below.

Mountain Bike Rentals	Roadrace Bike Rentals
8 zeds for 1st hour 3 zeds for each additional hour	10 zeds for 1st hour 2 zeds for each additional hour
	

A. Use the information in the posters to complete the tables.

Mountain Bike Rentals		Roadrace Bike Rentals	
Hours	Cost (zeds)	Hours	Cost (zeds)
1	8	1	10
2	11	2	12
3		3	
4		4	
5		5	
6		6	

B. For what number of hours are the rental costs the same at the two clubs?

Answer: \_\_\_\_\_

C. From which club does it cost less to rent a bike for 12 hours?

- (A) Mountain Bike Rentals
- (B) Roadrace Bike Rentals
- (C) They are both the same
- (D) It cannot be worked out

M031242

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## Content Domain

Data Display

## Cognitive Domain

Knowing

## Maximum Points

1

## Key

See scoring guide



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Code	Response	Item: M031242B
	<b>Correct Response</b>	
<b>10</b>	3 (as long as does not contradict Part A including table empty or incomplete).	
<b>11</b>	Number(s) correct according to a complete but erroneous table in Part A OR indicates no match according to a complete but erroneous table in Part A.	
	<b>Incorrect Response</b>	
<b>79</b>	Incorrect (including crossed out/erased, stray marks, illegible or off task).	
	<b>Nonresponse</b>	
<b>99</b>	Blank	



## TIMSS2007

Mathematics  
Fourth Grade

Posters for two sports clubs that rent bikes are shown below.


**Mountain Bike Rentals**

8 zeds for 1st hour  
3 zeds for each additional hour



**Roadrace Bike Rentals**

10 zeds for 1st hour  
2 zeds for each additional hour



A. Use the information in the posters to complete the tables.

Mountain Bike Rentals	
Hours	Cost (zeds)
1	8
2	11
3	
4	
5	
6	

Roadrace Bike Rentals	
Hours	Cost (zeds)
1	10
2	12
3	
4	
5	
6	

B. For what number of hours are the rental costs the same at the two clubs?

Answer: \_\_\_\_\_

C. From which club does it cost less to rent a bike for 12 hours?

- (A) Mountain Bike Rentals
- (B) Roadrace Bike Rentals
- (C) They are both the same
- (D) It cannot be worked out

M031242

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Content Domain

Data Display

Cognitive Domain

Reasoning

Maximum Points

1

Key

B



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**TIMSS2007****Mathematics****Fourth Grade**

A man took his 3 children to a fair. Tickets cost twice as much for adults as for children. The father paid a total of 50 zeds for the 4 tickets.

How many zeds did each child's ticket cost? Show your work.

Answer: \_\_\_\_\_

M031247

**Content Domain**

Number

**Cognitive Domain**

Reasoning

**Maximum Points**

2

**Key**

See scoring guide

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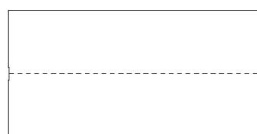


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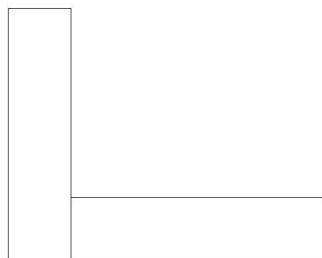
Code	Response	Item: M031247
	<b>Correct Response</b>	
20	10 or 10 zeds with work shown:	
	<b>Partial Response</b>	
10	10 or 10 zeds with no work shown	
11	Correct method but computation error	
	<b>Incorrect Response</b>	
70	$\frac{50}{4}$ or 12.5	
79	Other incorrect (including crossed out/erased, stray marks, illegible or off task).	
	<b>Nonresponse</b>	
99	Blank	

**TIMSS2007****Mathematics****Fourth Grade**

Jill had a rectangular piece of paper.



She cut her paper along the dotted line and made an L shape like this.



Which of these statements is true?

- (A) The area of the L shape is greater than the area of the rectangle.
- (B) The area of the L shape is equal to the area of the rectangle.
- (C) The area of the L shape is less than the area of the rectangle.
- (D) You cannot work out which area is greater without measuring.

**Content Domain**

Geometric Shapes  
and Measures

**Cognitive Domain**

Knowing

**Maximum Points**

1

**Key**

B

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M031173

Maria has 6 red boxes. Each red box has 4 pencils inside. She also has 3 blue boxes. Each blue box has 2 pencils inside. How many pencils does Maria have altogether?

- (A) 6
- (B) 15
- (C) 24
- (D) 30

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**TIMSS2007**

## Mathematics

### Fourth Grade

#### Content Domain

Number

#### Cognitive Domain

Applying

#### Maximum Points

1

#### Key

D

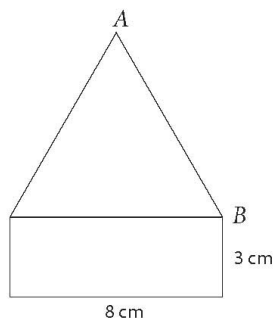


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## TIMSS2007

## Mathematics

## Fourth Grade



The figure above is made from a rectangle and a triangle with three equal sides. What is the length, in centimeters, of side  $AB$ ?

- (A) 8
- (B) 9
- (C) 10
- (D) 11

M031085

## Content Domain

Geometric Shapes  
and Measures

## Cognitive Domain

Knowing

## Maximum Points

1

## Key

A











Mathematics  
Fourth Grade



Content Domain  
Data Display

Cognitive Domain  
Applying

Maximum Points  
1

Key  
A

Street	Number of houses
Main	    
Center	 
First	  
Hill	

Mary is making a chart to show the number of houses on some streets.  
 Every  stands for 5 houses. There are 20 houses on Hill Street.  
 How many  should Mary put in the chart beside Hill Street?

- (A) 4
- (B) 5
- (C) 15
- (D) 20

## TIMSS2007

## Mathematics

## Fourth Grade

$$\frac{4}{5} - \frac{1}{5} =$$

(A)  $\frac{3}{5}$

(B)  $\frac{3}{10}$

(C)  $\frac{3}{25}$

(D) 3

M031029

## Content Domain

Number

## Cognitive Domain

Knowing

## Maximum Points

1

## Key

A

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M031030

$12.36 - 9.7 =$

Answer: \_\_\_\_\_

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# TIMSS2007

## Mathematics Fourth Grade

<b>Content Domain</b>
Number
<b>Cognitive Domain</b>
Knowing
<b>Maximum Points</b>
1
<b>Key</b>
See scoring guide

Code	Response	Item: M031030
	<b>Correct Response</b>	
10	2.66	
	<b>Incorrect Response</b>	
70	3.29	
79	Other incorrect (including crossed out/erased, stray marks, illegible, or off task)	
	<b>Nonresponse</b>	
99	Blank	

M031332

Which of these numbers is closest in size to 10?

- (A) 0.10
- (B) 9.99
- (C) 10.10
- (D) 10.90

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**TIMSS2007**

## Mathematics

### Fourth Grade

#### Content Domain

Number

#### Cognitive Domain

Knowing

#### Maximum Points

1

#### Key

B



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Lynch School of Education, Boston College

**TIMSS2007****Mathematics****Fourth Grade**

The first four terms in a number pattern are shown below.

2, 4, 8, 16, ...

What is the next number in the pattern?

- Ⓐ 24
- Ⓑ 30
- Ⓒ 32
- Ⓓ 64

M031098

**Content Domain**

Number

**Cognitive Domain**

Applying

**Maximum Points**

1

**Key**

C

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M031254

A shelf is 240 cm long. Chris is putting boxes on the shelf. Each box takes up 20 cm of shelf space. Which of these number sentences shows how many boxes Chris can fit on the shelf? The number of boxes is shown as ▲.

- (A)  $240 - 20 = \blacktriangle$
- (B)  $240 \div 20 = \blacktriangle$
- (C)  $240 + 20 = \blacktriangle$
- (D)  $240 \times 20 = \blacktriangle$

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**TIMSS2007**

## Mathematics

### Fourth Grade

#### Content Domain

Number

#### Cognitive Domain

Applying

#### Maximum Points

1

#### Key

B

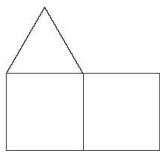


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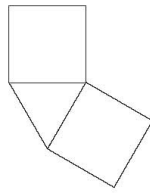
## TIMSS2007

## Mathematics

## Fourth Grade



Rita



Ina



Lana

Rita, Ina, and Lana take turns arranging 3 tiles. Each arranges the tiles in a different shape as shown above. Which of the following is true about the area of the shapes?

- (A) Rita's shape has a greater area than the others.
- (B) Ina's shape has a greater area than the others.
- (C) Lana's shape has a greater area than the others.
- (D) All of the shapes have the same area.

M031038

## Content Domain

Geometric Shapes  
and Measures

## Cognitive Domain

Knowing

## Maximum Points

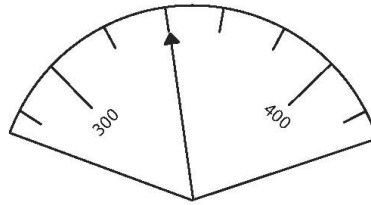
1

## Key

D

# TIMSS2007

## Mathematics Fourth Grade



On the scale above, what number does the pointer indicate?

- (A) 302
- (B) 310
- (C) 320
- (D) 340

M031276

### Content Domain

Number

### Cognitive Domain

Knowing

### Maximum Points

1

### Key

D

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**TIMSS2007****Mathematics****Fourth Grade**

John is going to bake biscuits. He has to heat up the oven for 10 minutes, then bake the biscuits for 12 minutes. John wants to finish baking the biscuits at 11:00. What is the latest he should turn on the oven?

- (A) 10:38
- (B) 10:48
- (C) 10:50
- (D) 11:22

M031064

**Content Domain**

Number

**Cognitive Domain**

Reasoning

**Maximum Points**

1

**Key**

A

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## TIMSS2007

## Mathematics

## Fourth Grade

## Content Domain

Geometric Shapes  
and Measures

## Cognitive Domain

Knowing

## Maximum Points

1

## Key

B

Chris has lots of tiles like this:



Julio has lots of tiles like this:



Pierre has lots of tiles like this:



Ben has lots of tiles like this:



Who would need the least number of tiles to cover a classroom floor with his tiles?

- (A) Chris
- (B) Julio
- (C) Pierre
- (D) Ben

M031006

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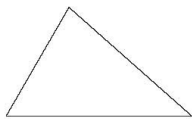


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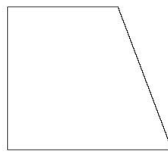
## TIMSS2007

## Mathematics

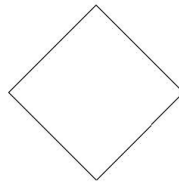
## Fourth Grade



P



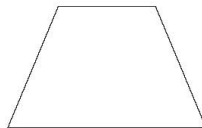
Q



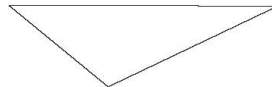
R



S



T



U

List the letters of all the shapes that are triangles.

Answer: \_\_\_\_\_

M031330

## Content Domain

Geometric Shapes  
and Measures

## Cognitive Domain

Knowing

## Maximum Points

1

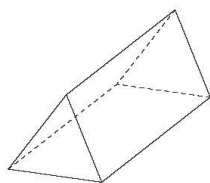
## Key

See scoring guide

Code	Response	Item: M031330
	<b>Correct Response</b>	
10	P, S, and U only	
	<b>Incorrect Response</b>	
79	Incorrect (including crossed out/erased, stray marks, illegible, or off task)	
	<b>Nonresponse</b>	
99	Blank	

# TIMSS2007

## Mathematics Fourth Grade



Which of these could be folded to make a shape like the 3-D figure above?

- (A)
- (B)
- (C)
- (D)

### Content Domain

Geometric Shapes  
and Measures

### Cognitive Domain

Applying

### Maximum Points

1

### Key

D

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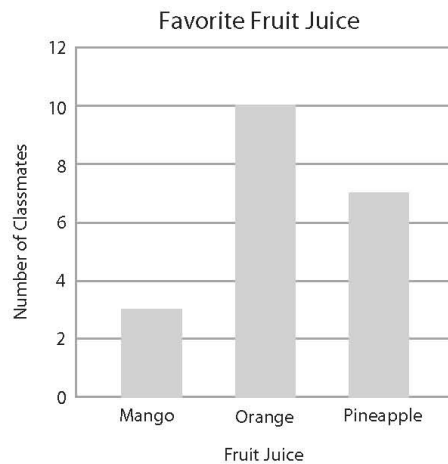
Mathematics  
Fourth Grade

Content Domain  
Data Display

Cognitive Domain  
Reasoning

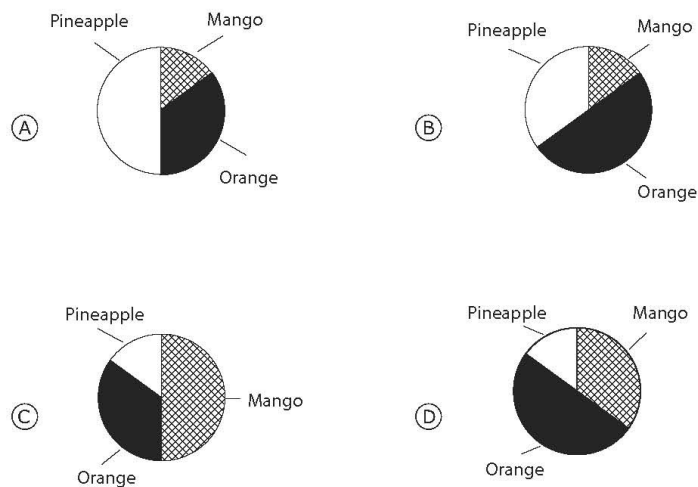
Maximum Points  
1

Key  
B



Lena asked her 20 classmates if they like orange, mango, or pineapple juice the best. She shows her data in the bar graph above.

She also drew a pie chart using the same data. Which of the following is the pie chart for this data?





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