

# Grade 6

Assessment of Reading, Writing and Mathematics, Junior Division

## Student Booklet

# Mathematics

Spring 2014

### **RELEASED ASSESSMENT QUESTIONS**

**Record your answers on the Multiple-Choice  
Answer Sheet.**

After each assessment, EQAO makes approximately half of the test items (questions) public. This allows EQAO to build a bank of assessment material that can be used in the future.

Items that are not published in this booklet are replaced by their description.

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Education Quality and  
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# **Mathematics**

## **Section 1**

- 1** A pattern is shown below.

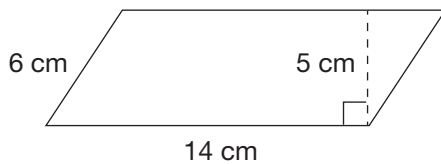
1, 2, 4, 8, ...

Which rule best describes the pattern?

Start with 1 and

- a add 1 to get the next term.
- b add 2 to get the next term.
- c divide by 2 to get the next term.
- d multiply by 2 to get the next term.

- 2** The parallelogram below will be cut into two congruent triangles.



What is the area of one of the triangles?

- a  $35 \text{ cm}^2$
  - b  $42 \text{ cm}^2$
  - c  $70 \text{ cm}^2$
  - d  $84 \text{ cm}^2$
- 3** A store sells 12 oranges for \$3.96.

How much does one orange cost?

- a \$3.84
- b \$3.03
- c \$0.39
- d \$0.33

- 4** A list of numbers is shown below.

11, 5, 11, 9, 4

What is the mean of these numbers?

- a 7
- b 8
- c 9
- d 11

- 5** Which two equations are true if  $n = 2$ ?

Equation 1:  $4 + n + 3 = 5$

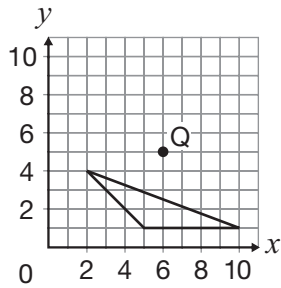
Equation 2:  $4 - n + 3 = 5$

Equation 3:  $4 \times n + 3 = 5$

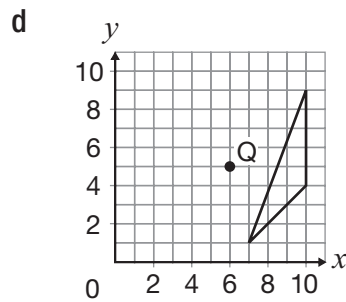
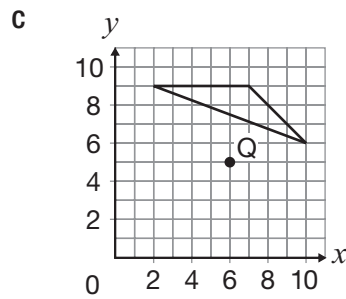
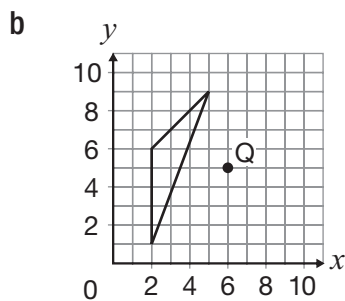
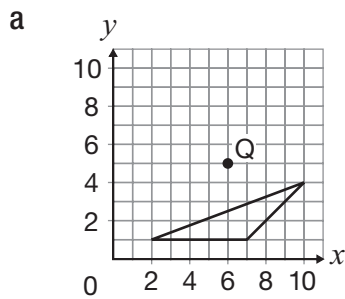
Equation 4:  $4 \div n + 3 = 5$

- a Equation 2 and Equation 4
- b Equation 2 and Equation 3
- c Equation 1 and Equation 4
- d Equation 1 and Equation 2

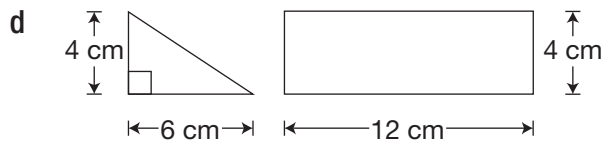
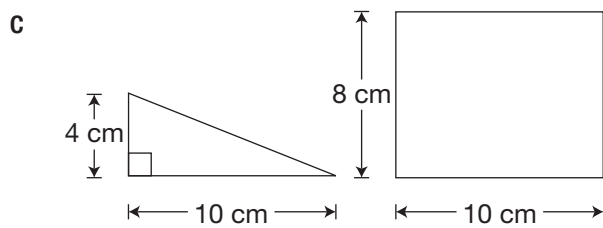
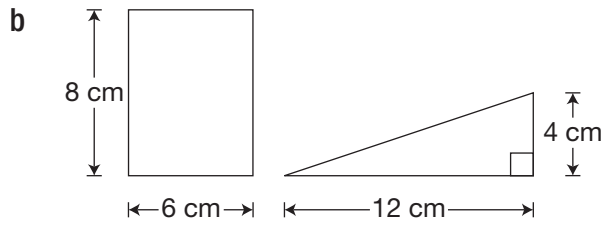
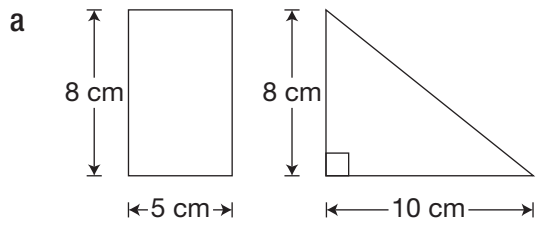
- 6** Dylan rotates the triangle below  $90^\circ$  counter-clockwise about Point Q.



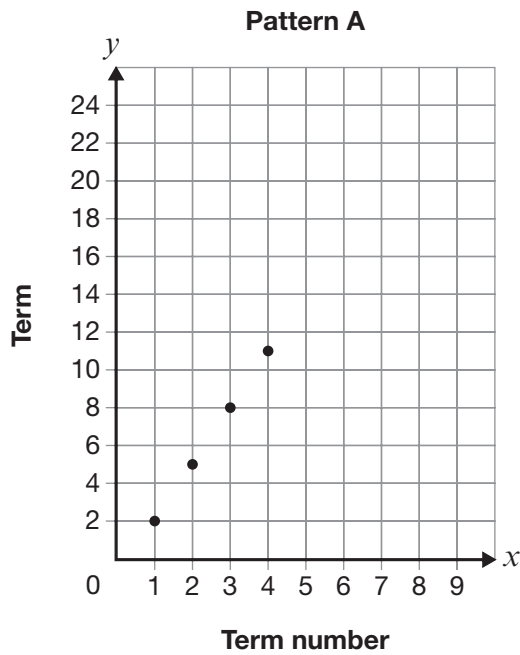
Which of the following triangles shows the result of this transformation?



**7** Which of the following shows a rectangle and a triangle that have the same area?



**8** Two patterns are shown below.



**Pattern B**

Start with 7 and add 2 to get the next term.

If both patterns continue in the same way, which pattern will reach a term with a value of 23 first?

Justify your answer.

Pattern \_\_\_\_\_ will reach a term with a value of 23 first.

- 9** A Canadian television station shows 16 minutes of commercials every hour between 8:00 a.m. and 11:00 p.m. every day.

How many minutes of commercials are there on the station between 8:00 a.m. and 11:00 p.m. in 365 days?

Show your work.

There are \_\_\_\_\_ minutes of commercials on the station between 8:00 a.m. and 11:00 p.m. in 365 days.

**10** Toby has a bag of 40 coloured blocks. Without looking, he reaches in and pulls one block out.

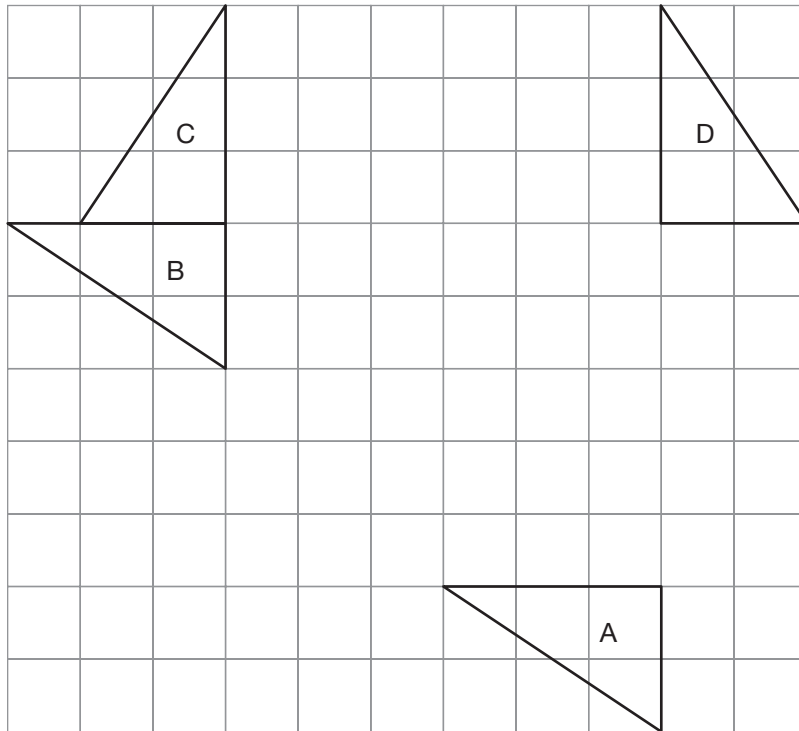
Complete the table below to determine the probability of choosing a red, green, purple or yellow block.

Colour	Number in bag	Probability of choosing a block of this colour
Red	6	
Green	10	
Purple		
Yellow		0.2

Show your work.



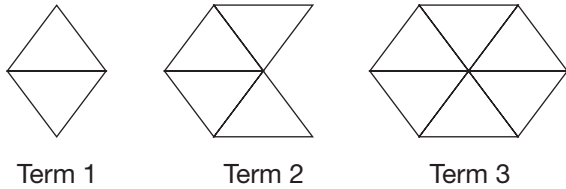
- 11** The grid below shows a triangle that has been moved using transformations from position A to position B, then from position B to position C and finally from position C to position D.



Complete the chart below with descriptions of the transformations needed to move the triangle. Be sure to include all units and directions in the chart. Show points of rotation and lines of reflection on the grid.

Transformation	Type of transformation	Description of transformation
A to B		
B to C		
C to D		

**12** The pattern shown below is made of triangles.



The pattern continues.

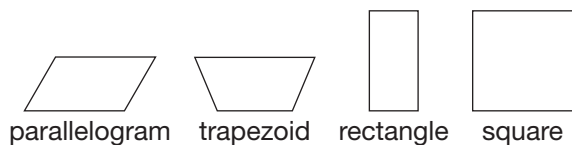
Which of the following represents the number of triangles in Terms 4, 5 and 6?

- a 2, 4, 6
- b 6, 8, 10
- c 8, 10, 12
- d 10, 12, 14

**13** What is the value of  $0.730 - 0.156$ ?

- a 0.083
- b 0.426
- c 0.574
- d 0.626

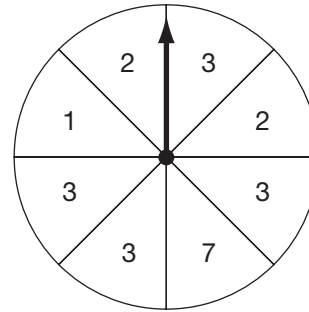
**14** The quadrilaterals shown below are ordered from smallest to largest based on a geometric property.



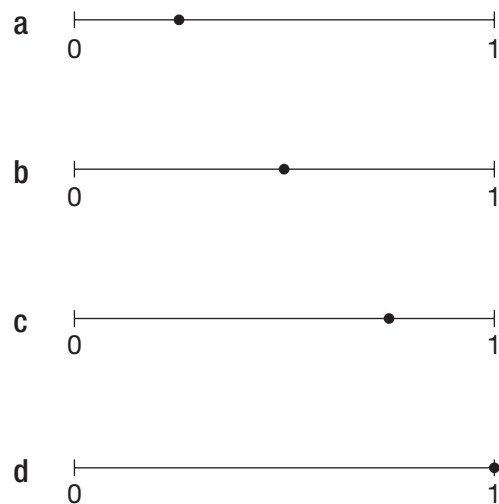
Which geometric property was used?

- a number of acute angles
- b number of lines of symmetry
- c number of pairs of equal sides
- d number of pairs of parallel sides

**15** A spinner is shown below.



On which of the following number lines does the point represent the probability of spinning an even number?



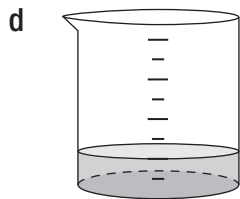
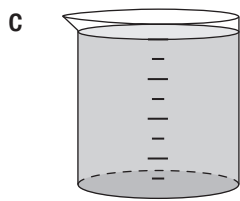
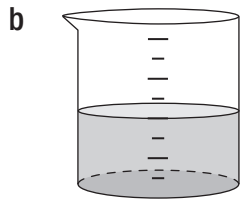
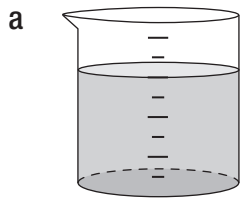
**16** A fire truck has a ladder measuring 3 units in length.

Which unit would be most appropriate to measure the ladder?

- a kilometre
- b decimetre
- c decametre
- d centimetre

- 17** Each beaker of water below has a capacity of 2 L.

Which beaker appears to have about 500 mL of water in it?



- 18** Mrs. Garrett sends surveys to 120 students, and 78 students return the survey.

Which statement best describes the percent of students who return the survey?

- a** exactly 50%
- b** exactly 75%
- c** between 50% and 75%
- d** between 75% and 100%



# **Mathematics**

## **Section 2**

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- |  |   |
|--|---|
| <b>1</b> identify decimal numbers represented on a grid<br>(Knowledge and Understanding) | <b>10</b> describe a polygon<br>(Knowledge and Understanding)   |
| <b>2</b> solve problems involving the addition of<br>decimal numbers (Application)       | <b>11</b> construct a polygon (Application)   |
| <b>3</b> determine a ratio (Thinking)  | <b>12</b> identify and extend a growing pattern<br>(Thinking)   |
| <b>4</b> solve a problem involving fractions, decimal<br>numbers and percents (Thinking) | <b>13</b> solve an algebraic equation involving variables<br>(Application)                              |
| <b>5</b> estimate the area of a shape (Application)                                      | <b>14</b> identify a pattern given the rule (Application)   |
| <b>6</b> describe the net of a figure<br>(Knowledge and Understanding)                   | <b>15</b> determine the theoretical probability of an<br>outcome in a probability experiment (Thinking) |
| <b>7</b> compare the areas of two polygons (Thinking)                                    | <b>16</b> select an appropriate graph for given data<br>(Knowledge and Understanding)                   |
| <b>8</b> calculate the area of polygons (Application)                                    | <b>17</b> interpret data between graphs (Application)   |
| <b>9</b> describe a location in the first quadrant of a<br>graph (Application)           | <b>18</b> solve problems involving data in graphs<br>(Thinking)   |

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