

# Grade 6

Assessment of Reading, Writing and Mathematics, Junior Division

## Student Booklet

# Mathematics

SPRING 2009

**RELEASED ASSESSMENT QUESTIONS**

Education Quality and  
Accountability Office



Please note: The format of these booklets is slightly different from that used for the assessment. The items themselves remain the same.

- 1** Which of the following lists shows these numbers in order from least to greatest?

**1.250, 12.50, 0.125, 125.0**

- a 0.125, 12.50, 1.250, 125.0
- b 125.0, 12.50, 1.250, 0.125
- c 12.50, 125.0, 0.125, 1.250
- d 0.125, 1.250, 12.50, 125.0

- 2** Chandra, Brittany, Ben and Daniel buy different sandwiches and salads for lunch. Their choices are shown below.

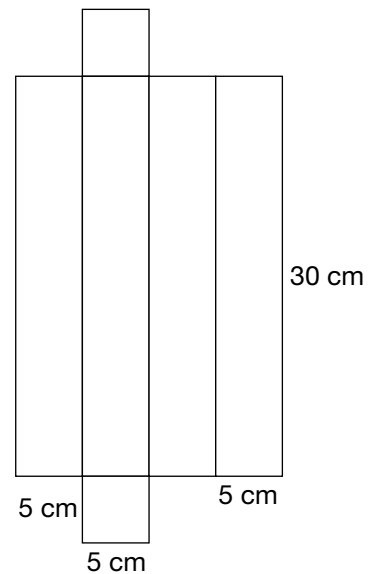
**Prices for Lunch**

	Salad	Sandwich
Chandra	\$4.48	\$3.99
Brittany	\$4.48	\$4.99
Ben	\$3.49	\$4.99
Daniel	\$3.49	\$3.99

Which person should receive about \$2.50 change from \$10.00?

- a Chandra
- b Brittany
- c Ben
- d Daniel

- 3** Rebecca creates a net of a rectangular prism, as shown below.



What is the total surface area of the rectangular prism?

- a  $450 \text{ cm}^2$
- b  $600 \text{ cm}^2$
- c  $650 \text{ cm}^2$
- d  $750 \text{ cm}^2$

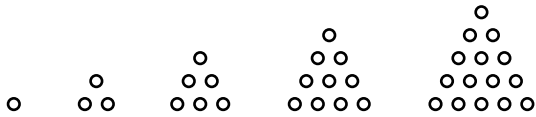
- 4** Ravi makes 2.80 L of pudding. He wants to completely fill 350 mL cups with pudding. Which of the following expressions can be used to find how many 350 mL cups Ravi can fill?

- a  $2.80 \times 1000 \div 350$
- b  $2.80 \times 1000 + 350$
- c  $2.80 \times 350 \times 1000$
- d  $2.80 \times 350 \div 1000$

**5** If  $a + c = 24$ , what is the value of  $e$  in the equation  $a + c + e = 27$ ?

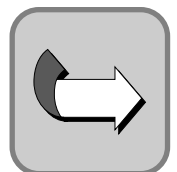
- a 3
- b 9
- c 15
- d 51

**6** Consider the five terms in the following pattern.



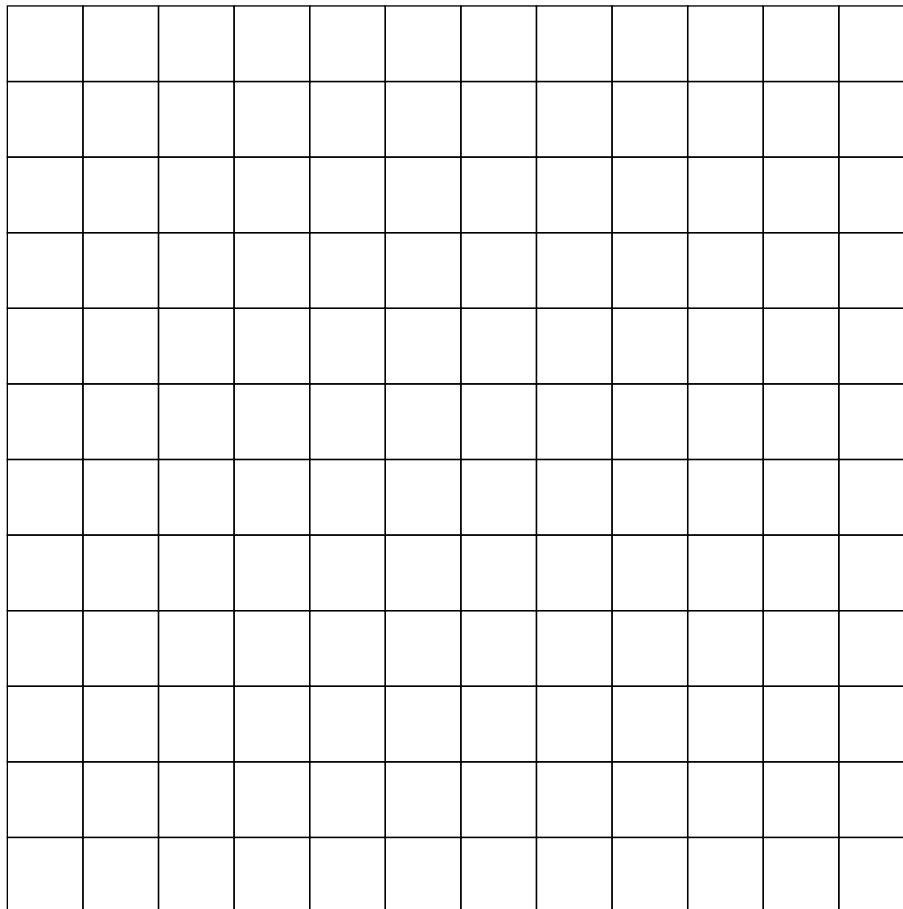
If the pattern continues in the same way, how many circles will be in the seventh term?

- a 21
- b 25
- c 28
- d 36



**7** Construct a pentagon on the grid below that meets the following conditions.

- exactly 1 line of symmetry
- 2 obtuse angles
- 2 right angles
- 1 acute angle
- at least 1 side with a length of 3 units



Draw the line of symmetry on your pentagon.

**8** Keenan places 3 green marbles, 4 yellow marbles and 1 blue marble in a bag.

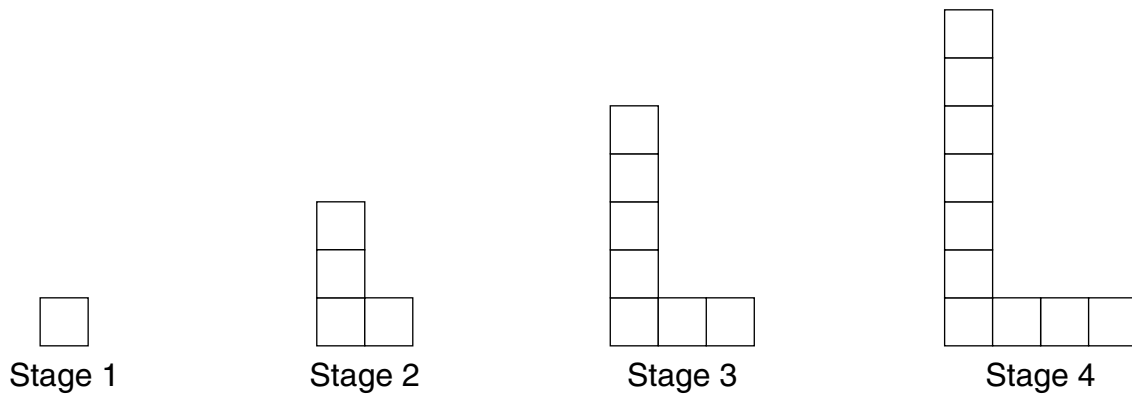
Keenan then adds 1 green marble and 1 yellow marble to the bag.

Does the probability that Keenan will randomly choose a yellow marble increase, decrease or stay the same?

Circle one:          Increases          Decreases          Stays the same

Justify your answer.

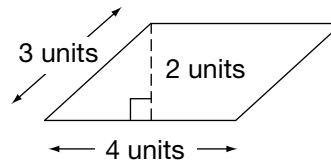
9 Ms. Lewis has 50 blocks. She uses 22 of these blocks to make the pattern shown below.



How many stages will Ms. Lewis be able to complete with the 50 blocks?

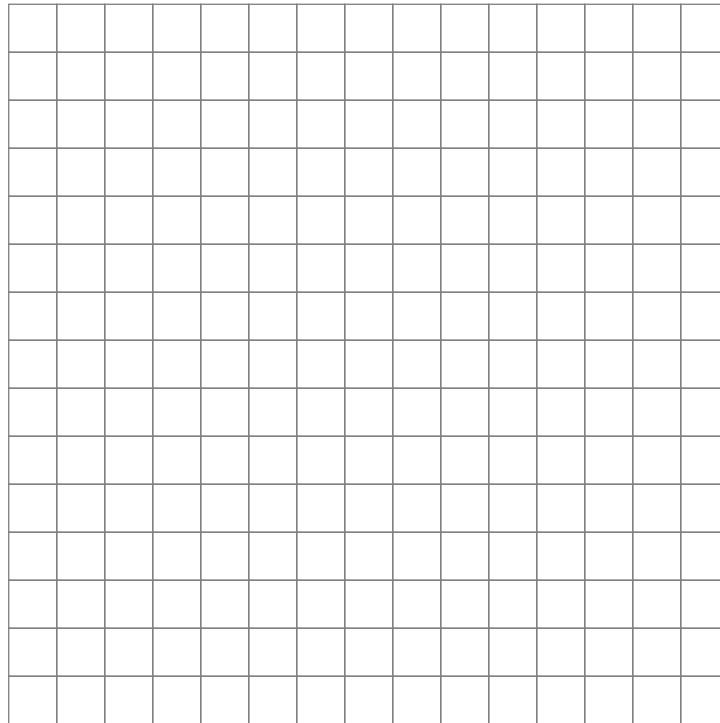
Justify your answer.

- 10** Determine the area of the parallelogram below.



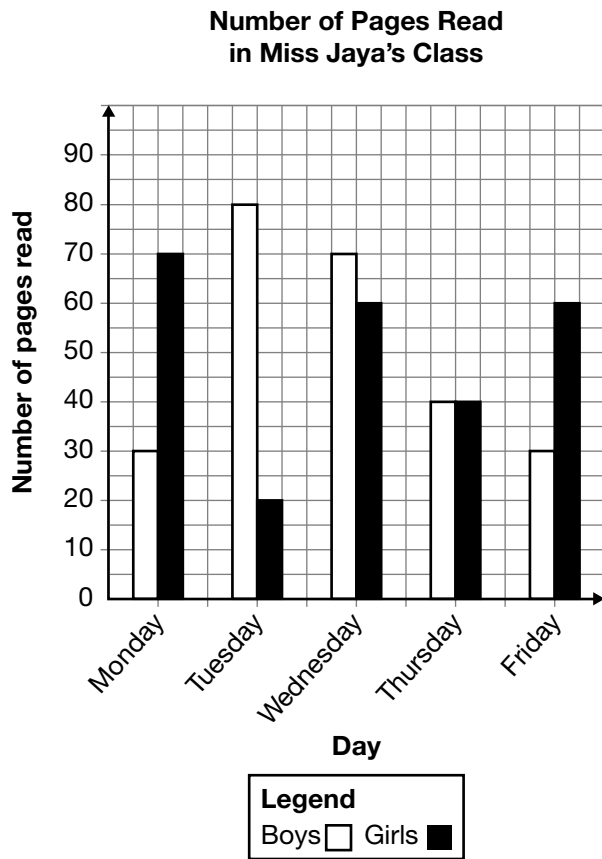
The area of the parallelogram is \_\_\_\_\_.

Draw a triangle and a rectangle each with the same area as the parallelogram. Use the grid below.



Justify your answers.

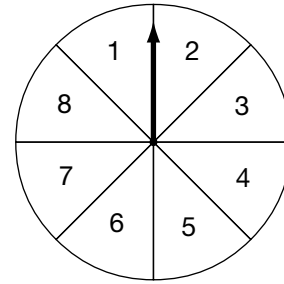
- 11** The bar graph shows the number of pages the boys and girls in Miss Jaya’s class read in one week.



Which conclusion can be made about the number of pages read?

- a The boys read more pages than the girls during this week.
- b The girls read more pages than the boys during this week.
- c The students read more pages on Tuesday than on Monday.
- d The boys and the girls read the same number of pages during this week.

- 12** The spinner below has 8 equal-sized sections.

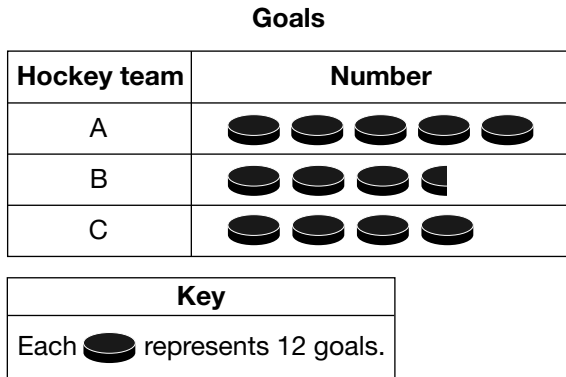


The spinner is spun one time. What is the probability that the arrow will land in a section with a number greater than 3?

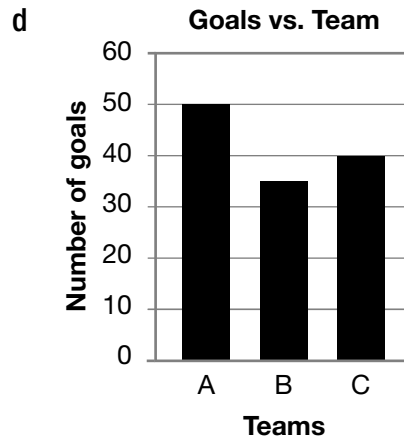
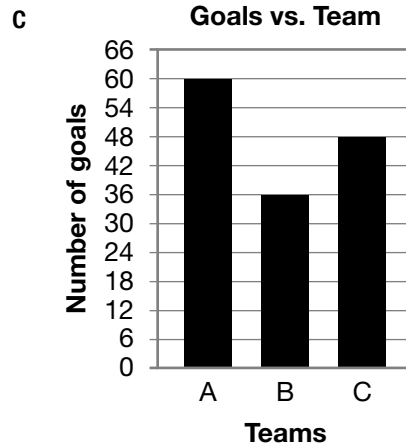
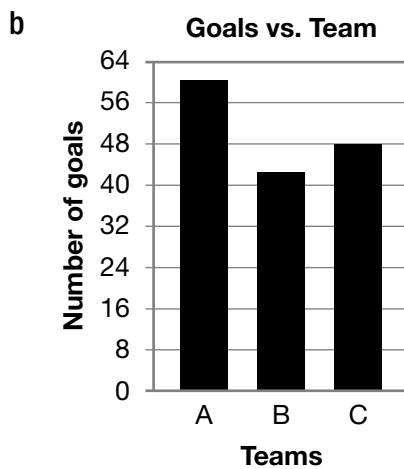
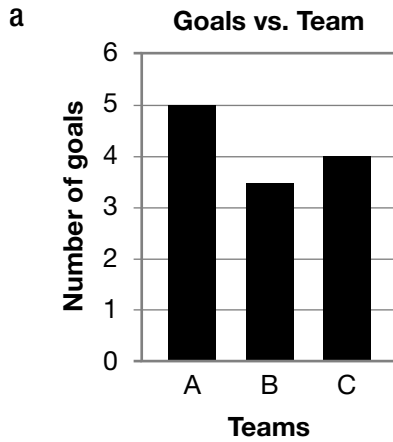
- a 0.125
- b 0.250
- c 0.625
- d 0.750



- 13** The pictograph below shows the number of goals scored by three hockey teams.



Which bar graph represents the data shown in the pictograph?



**14** Which rule describes the following pattern?

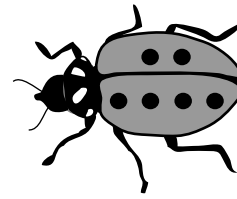
1, 2, 4, 8

- a Start with 1 and add 1 to find the next term.
- b Start with 1 and add 2 to find the next term.
- c Start with 1 and divide by 2 to find the next term.
- d Start with 1 and multiply by 2 to find the next term.

**15** If  $6 \times a = 54$  and  $b - a = 14$ , what is  $a \times b$ ?

- a 32
- b 45
- c 126
- d 207

**16** Look at the ladybug below.

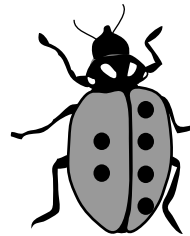


The ladybug is rotated three times in the following order.

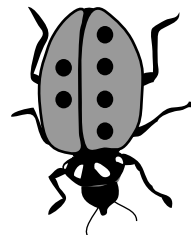
- $90^\circ$  counter-clockwise
- $180^\circ$  clockwise
- $180^\circ$  clockwise

Which of the following best illustrates the ladybug's position after the three rotations?

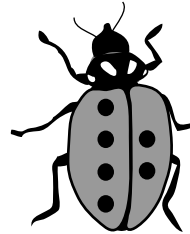
a



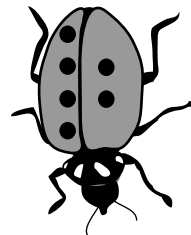
b



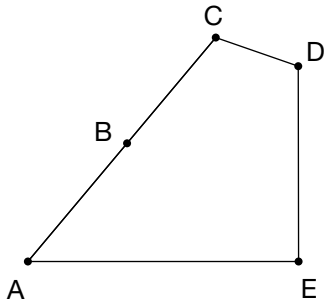
c



d



- 17** Points A, B and C lie on a line in the polygon shown below.



Which table best classifies the angles of the polygon?

**a**

Angle	Type
A	Obtuse
B	Straight
C	Acute
D	Acute
E	Right

**b**

Angle	Type
A	Acute
B	Right
C	Obtuse
D	Obtuse
E	Straight

**c**

Angle	Type
A	Acute
B	Straight
C	Obtuse
D	Right
E	Right

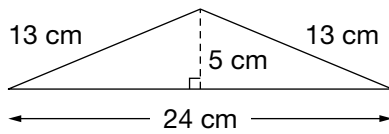
**d**

Angle	Type
A	Acute
B	Straight
C	Obtuse
D	Obtuse
E	Right

- 18** A regular polygon is created with angles of  $60^\circ$  and sides of 4 cm in length. Which statement below describes this polygon?

- a** triangle with perimeter of 12 cm
- b** triangle with perimeter of 16 cm
- c** rhombus with perimeter of 12 cm
- d** rhombus with perimeter of 16 cm

19 What is the area of the triangle shown below?



- a  $60 \text{ cm}^2$
- b  $65 \text{ cm}^2$
- c  $120 \text{ cm}^2$
- d  $156 \text{ cm}^2$

20 Elda has a rectangular piece of paper with an area of  $0.12 \text{ m}^2$ . She cuts this piece of paper into small rectangles each with an area of  $200 \text{ cm}^2$ .

What is the maximum number of these small rectangles that Elda can cut?

- a 6
- b 12
- c 24
- d 60

21 A diagonal of a parallelogram is drawn forming 2 triangles. If the area of one of the triangles is  $34 \text{ cm}^2$ , what is the area of the parallelogram?

- a  $17 \text{ cm}^2$
- b  $34 \text{ cm}^2$
- c  $68 \text{ cm}^2$
- d  $136 \text{ cm}^2$

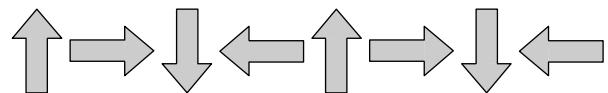
22 Natasha is 12 years old. Her teacher is 36 years old. Which ratio represents Natasha's age in 4 years to her teacher's age in 4 years?

- a 1:3
- b 2:5
- c 3:10
- d 4:9

23 Mrs. Evans has 30 students in her class. The class has about 75% girls. What is the **best** estimate of the number of boys in Mrs. Evans's class?

- a 3
- b 8
- c 15
- d 23

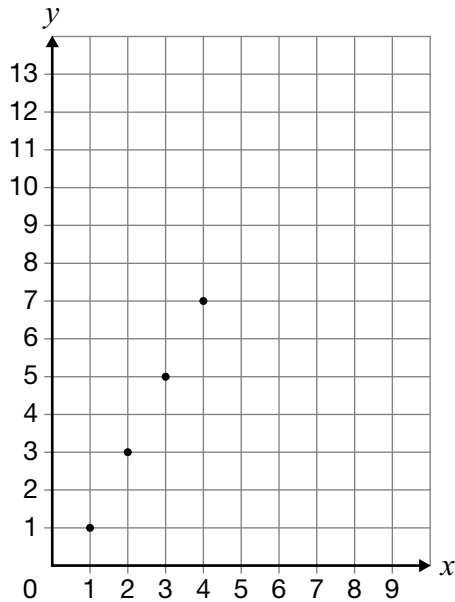
24 A repeating pattern is shown below.



What is the 16<sup>th</sup> figure in the pattern?

- a
- b
- c
- d

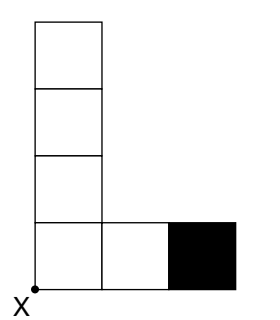
**25** Anya shows a pattern on the grid below.



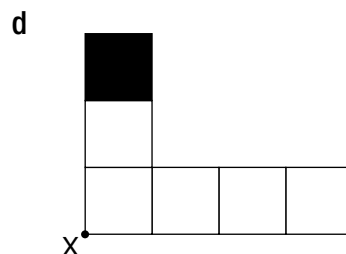
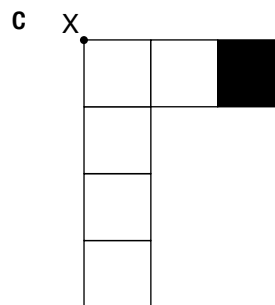
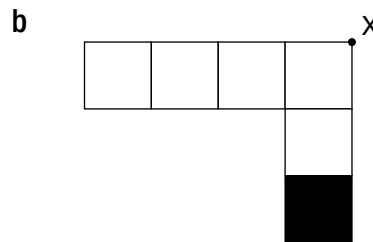
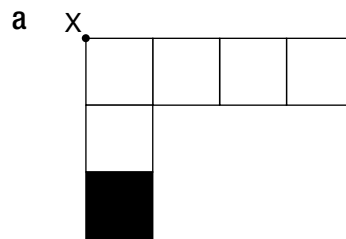
If the pattern continues in the same way, which coordinates represent a point in this pattern?

- a (6, 11)
- b (6, 12)
- c (7, 11)
- d (7, 12)

**26** The shape below is reflected across the dotted line and then rotated  $90^\circ$  clockwise about point X.



Which of the following shows the shape after the two transformations?

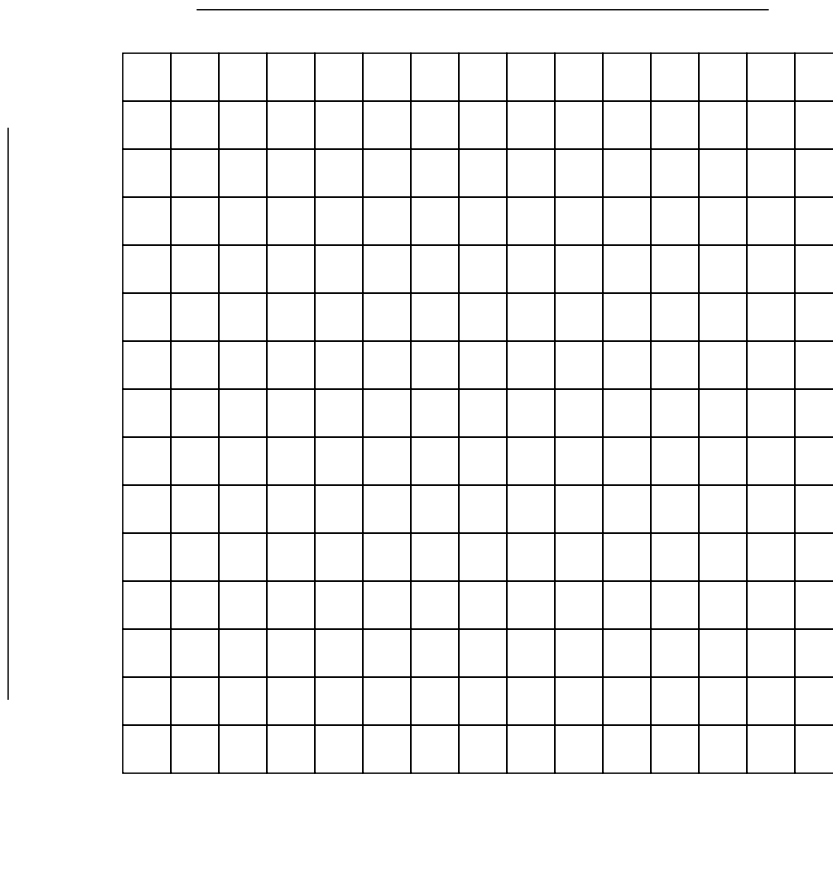


**27** The table below shows the weekly video sales at a store over a five-week period.

**Videos Sold**

Week	1	2	3	4	5
Number of videos sold	550	325	275	100	50

Draw a broken-line graph to represent this data. Show titles and labels on the graph.



Explain why a broken-line graph is the most appropriate graph to represent this data.

- 28** Carmen wants to install a fence. Each section of fence is 2.4 metres long and costs \$6.00 per metre. Carmen will need 16 sections of fence. How much change should he receive from \$250?

Show your work.

**29** Consider the fractions  $\frac{3}{2}$  and  $1\frac{3}{4}$ .

- Which of these fractions is larger?

Justify your answer.

The larger fraction is \_\_\_\_\_.

- Find a fraction between  $\frac{3}{2}$  and  $1\frac{3}{4}$ .

Justify your answer.

A fraction between  $\frac{3}{2}$  and  $1\frac{3}{4}$  is \_\_\_\_\_.



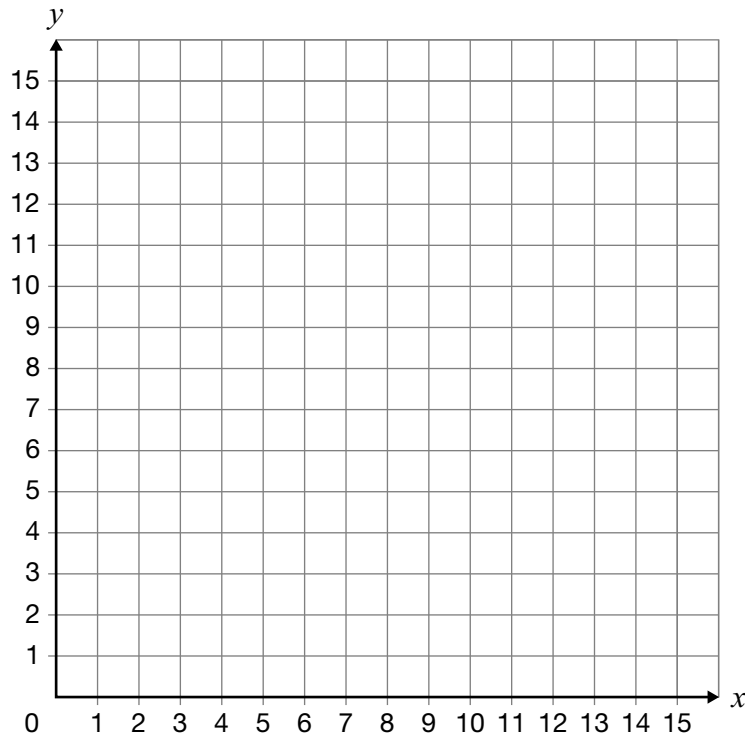
**30** Plot and label the following points to form parallelogram PQRS on the grid below.

P (9, 12)

Q (9, 8)

R (7, 6)

S (7, 10)



Rotate parallelogram PQRS  $90^\circ$  counter-clockwise about point R. Draw the new parallelogram on the grid above.

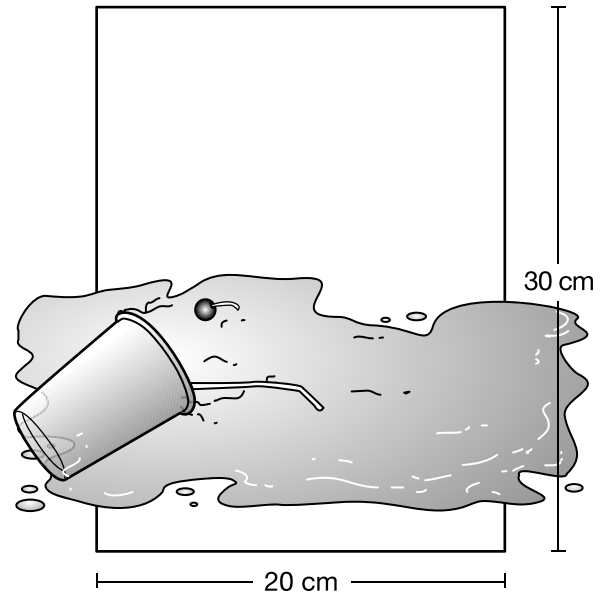
**31** It takes Nadeem 22 minutes to walk 1 kilometre. At this rate, approximately how long will it take Nadeem to walk 5 kilometres?

- a 1 hour
- b 2 hours
- c 100 hours
- d 110 hours

**32** Which expression is equivalent to  $128 \div 2$ ?

- a  $(120 \div 2) + (8 \div 2)$
- b  $(120 \div 2) \div (8 \div 2)$
- c  $(120 + 2) + (8 + 2)$
- d  $(120 + 2) \div (8 + 2)$

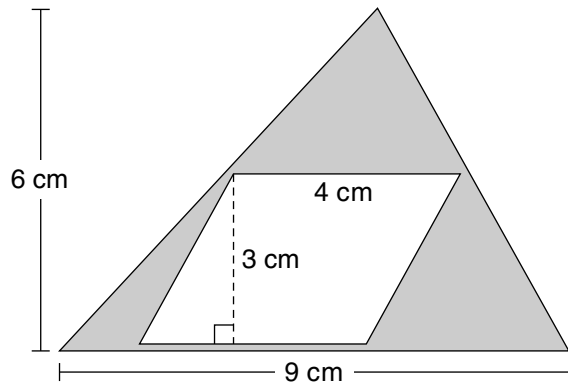
**33** Samantha spills a milkshake on a rectangular piece of paper as shown below.



Which of the following **best** approximates the area of the entire spill?

- a  $100 \text{ cm}^2$
- b  $300 \text{ cm}^2$
- c  $400 \text{ cm}^2$
- d  $600 \text{ cm}^2$

- 34** Which expression can be used to find the area of the shaded region?



- a  $54 \div 2 - 12$   
 b  $54 - 4 \times 12 \div 2$   
 c  $12 \div 2 - 54$   
 d  $12 - 54 \div 2$
- 35** A class records the colour of the cars that drive past the school in a short period. These data are shown in the table below.

Car Colour

Colour	Number of cars
Black	2
Blue	3
Grey	1
Red	3
White	1

Based on these data, if 40 cars drive past the school, how many cars could be expected to be blue?

- a 3  
 b 10  
 c 12  
 d 30

- 36** Judith records the amount of rainfall at her school for one week.

Amount of Rainfall

Day	Amount of rainfall (mm)
Sunday	20
Monday	18
Tuesday	0
Wednesday	22
Thursday	30
Friday	25
Saturday	25

What is the mean amount of rainfall for the week?

- a 20 mm  
 b 22 mm  
 c 23 mm  
 d 25 mm

**Education Quality and  
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