Grade 6

Assessment of Reading, Writing and Mathematics, Junior Division

Student Booklet

Mathematics

SPRING 2012

RELEASED ASSESSMENT QUESTIONS

Record your answers on the Multiple-Choice Answer Sheet.

Education Quality and Accountability Office

EQAO

Please note: The format of this booklet is different from that used for the assessment. The questions themselves remain the same.

1 Which of the following is equal in value to 8%?

a $\frac{16}{200}$

b $\frac{16}{50}$

c $\frac{4}{25}$

d $\frac{4}{5}$

2 The chart below shows data about DVD sales for 2 weeks.

DVD Type	Week 1	Week 2
Comedy	$75 800	$52 750
Mystery	$108 000	$99 700
Adventure	$75 800	$53 950

Which of the following statements about this data is **false**?

a Sales for all 3 DVD types decreased over the 2 weeks.

b Week 2 sales for all 3 DVD types totalled $206 400.

c Comedy sold less than either of the other types of DVDs over the 2 weeks.

d Total sales for adventure DVDs are about double those for mystery.

3 If the equation $x + 4 = 12$ is true, which of the following **best** describes the variable x?

a one unknown value

b two unknown values

c three unknown values

d many unknown values

4 The 4 terms of the pattern below are made of equilateral triangles with side lengths of 2 units.

Term 1 Term 2 Term 3 Term 4

Which number sequence represents the perimeters of the 4 terms of this pattern?

a 1, 2, 3, 4

b 3, 4, 5, 6

c 6, 8, 10, 12

d 6, 10, 14, 18

5 Lucas has 5 T-shirts in a drawer: 1 red, 2 yellow, 1 pink and 1 blue. He selects one T-shirt without looking.

What is the probability that Lucas selects a T-shirt that is **not** pink or blue?

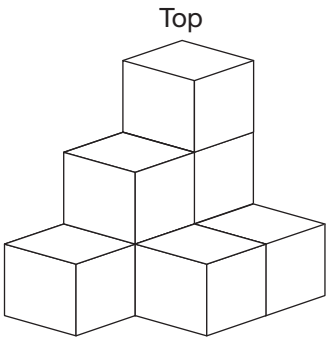
a $\frac{1}{5}$

b $\frac{2}{5}$

c $\frac{3}{5}$

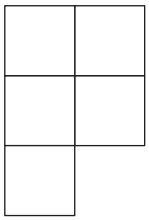
d $\frac{4}{5}$

6 Look at the figure below.

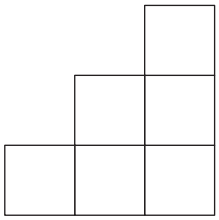


Which of the following is a top view of the figure?

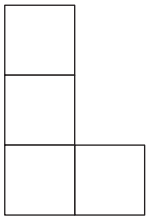
a



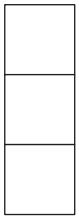
b



c



d

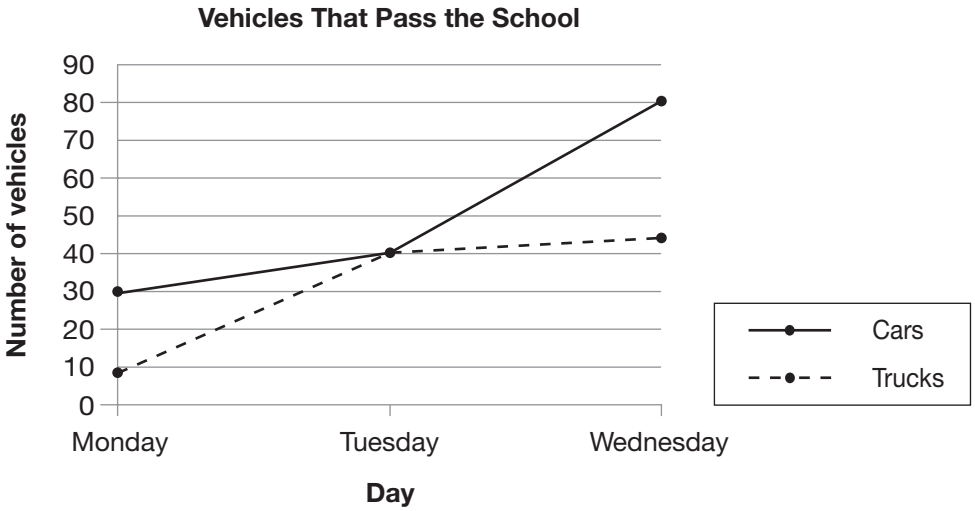


7 Andrew blinks his eyes about 3 times per minute when he is awake. He is awake approximately 14 hours per day. Does he blink his eyes more than 1 000 000 times in one year?

Circle one: Yes No

Justify your answer.

8 Matthew collects data about the vehicles that pass his school over three days. He makes the graph below.



Matthew concludes that about twice as many cars as trucks pass the school over the 3-day period. Is his conclusion correct?

Circle one: Yes No

Justify your answer.

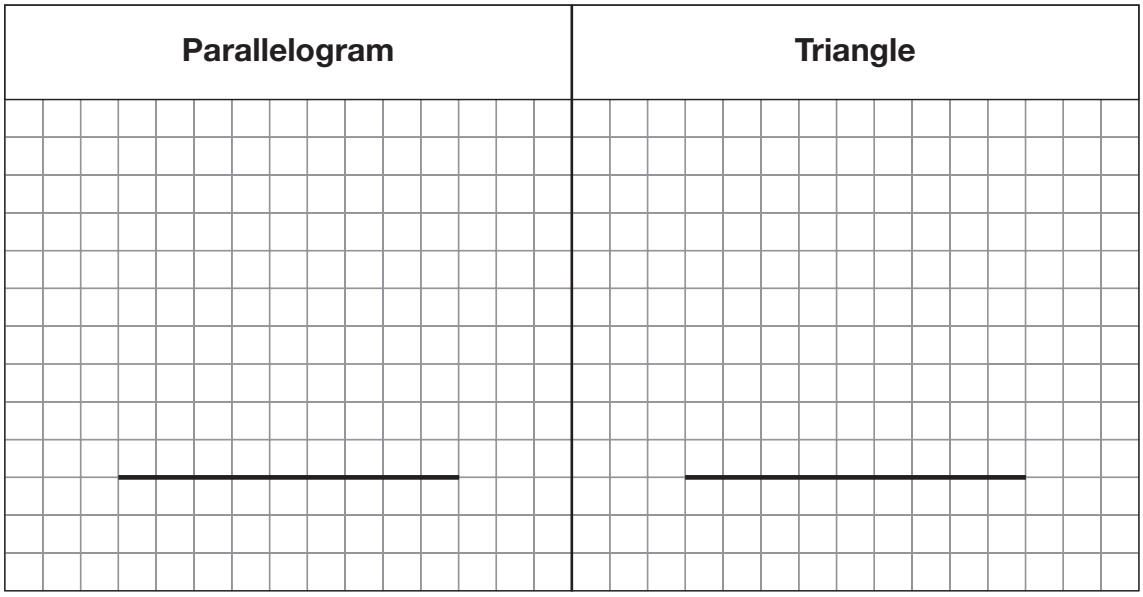
9 Connor has a bag of coloured tiles. There are 1 green, 3 black, 5 blue and 6 red tiles. He reaches into the bag and chooses 1 tile without looking.

What is the probability that the tile is **not** red?

Justify your answer.

Show the value of the probability on the number line below.

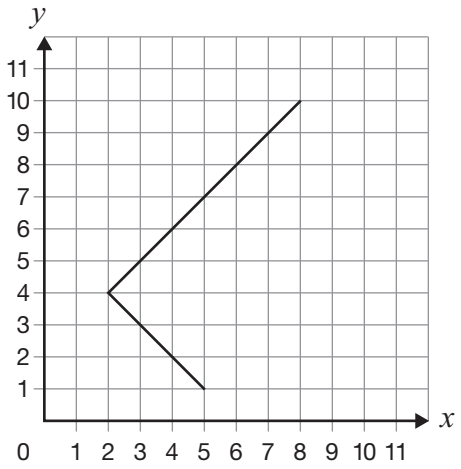
10 On the grid below, construct a parallelogram and a triangle using the darker lines. Each shape must have an area of 36 units^2.



☐ 1 unit^2

Justify your answer with calculations showing that each shape has an area of 36 units^2.

11 Kelly is drawing a rectangle on the grid below.



What are the coordinates of the missing vertex?

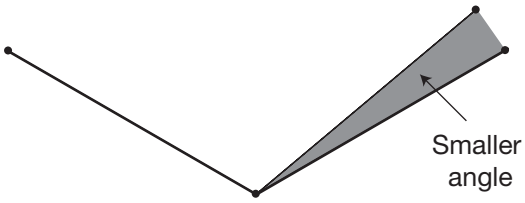
a (11, 7)

b (7, 11)

c (11, 6)

d (6, 11)

12 Karim is dividing the angle shown below into smaller equal angles. The first of the smaller angles is shaded.



How many smaller angles can Karim make in total?

a 60

b 12

c 10

d 6

13 Look at the numbers below.

$$\frac{3}{2}, \frac{5}{8}, \frac{9}{4}, 1\frac{7}{8}$$

Which list shows these numbers ordered from smallest to largest?

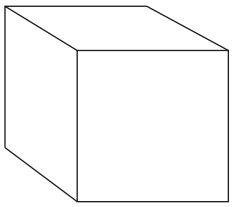
a $\frac{5}{8}, \frac{3}{2}, 1\frac{7}{8}, \frac{9}{4}$

b $\frac{5}{8}, \frac{3}{2}, \frac{9}{4}, 1\frac{7}{8}$

c $\frac{3}{2}, \frac{5}{8}, 1\frac{7}{8}, \frac{9}{4}$

d $\frac{3}{2}, \frac{9}{4}, \frac{5}{8}, 1\frac{7}{8}$

14 The area of one face of a cube is 4 cm^2.



What is the surface area of the cube?

a 10 cm^2

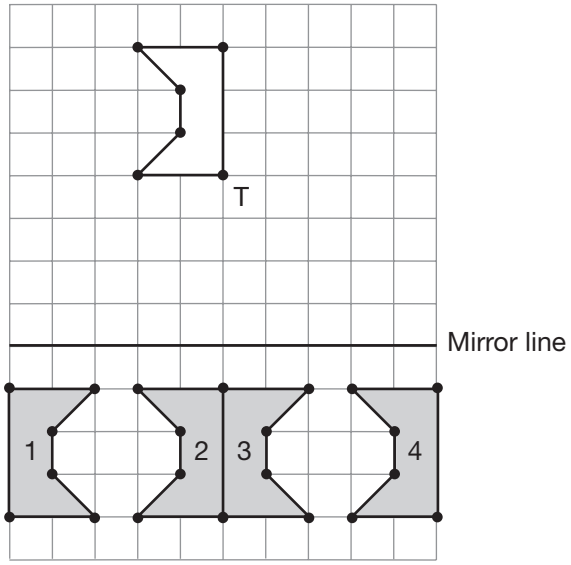
b 12 cm^2

c 20 cm^2

d 24 cm^2

15 The shape on the grid below goes through the following 3 transformations in order:

- rotation of 180° about Point T
- reflection across the mirror line
- translation 5 units left



Which shaded shape is the result?

a Shape 1

b Shape 2

c Shape 3

d Shape 4

16 Two triangles each have an area of 48 cm^2.

Which could be their dimensions?

a

Triangle	Base	Height
1	8 cm	12 cm
2	16 cm	6 cm

b

Triangle	Base	Height
1	8 cm	6 cm
2	12 cm	4 cm

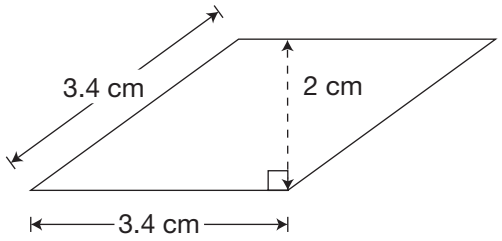
c

Triangle	Base	Height
1	3 cm	16 cm
2	24 cm	2 cm

d

Triangle	Base	Height
1	3 cm	8 cm
2	6 cm	4 cm

17 Consider the rhombus below.



What is the area of the rhombus?

a 5.4 cm^2

b 6.8 cm^2

c 11.6 cm^2

d 13.6 cm^2

18 The masses of 4 meteorites are 1.32 kg, 0.9 kg, 2.046 kg and 3.8 kg.

Which is the best estimate of the total mass of the 4 meteorites?

a 4 kg

b 6 kg

c 8 kg

d 10 kg

1 If $n \times a = 24$ and $n \times a + b = 33$, what is the value of b?

a 3

b 4

c 6

d 9

2 Consider the pattern below.

1161, 387, 129, 43

Which is its pattern rule?

To get the next term,

a divide each term by 3.

b divide each term by 4.

c subtract 86 from each term.

d subtract 774 from each term.

3 What is the ones digit of the answer to $3468 \div 100$?

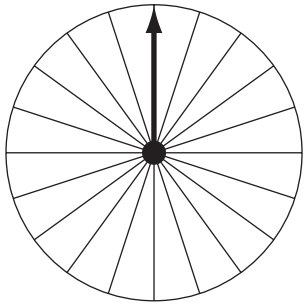
a 3

b 4

c 6

d 8

4 Henry designs the spinner below and labels the sections with the names of colours.



He wants 0.15 to be the probability of the arrow landing on "blue" in one spin.

How many sections should he label "blue"?

a 2

b 3

c 15

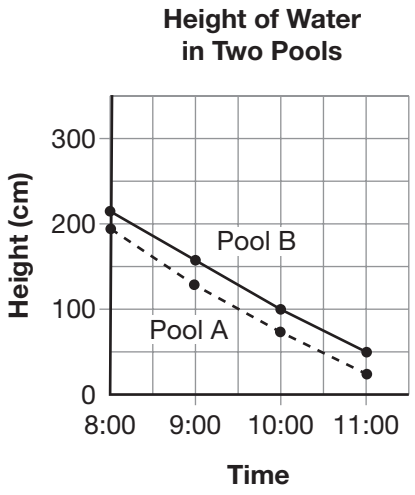
d 17

5 Two pools are being filled with water. The following table shows the height of the water in the pools at 4 different times.

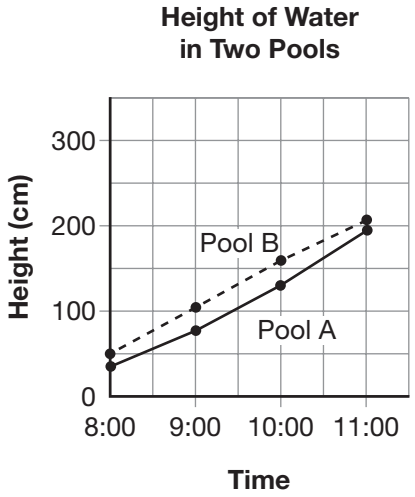
Time	Height (cm)	
	Pool A	Pool B
8:00	50	40
9:00	100	80
10:00	160	130
11:00	205	195

Which graph displays the data in the table accurately?

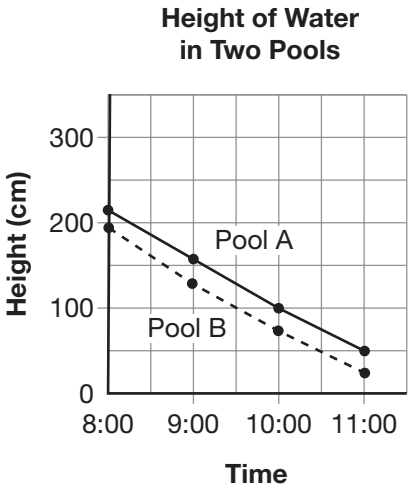
a



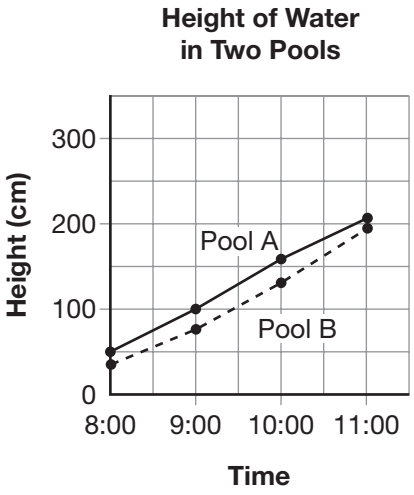
b



c



d



6 Jamie buys 3 ice cream cones for $4.65. At this rate, how much will it cost to buy 2 ice cream cones?

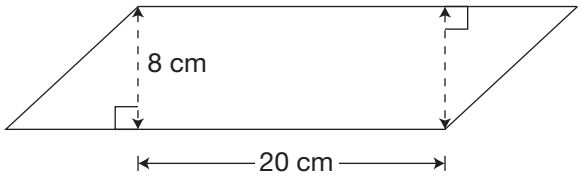
a $1.29

b $1.55

c $2.33

d $3.10

7 Sanjit makes a parallelogram. He starts with a rectangle and adds 2 congruent triangles as shown below.



The parallelogram has an area of 190 cm^2.

What is the area of each of the triangles?

a 15 cm^2

b 30 cm^2

c 160 cm^2

d 175 cm^2

8 A club has money for a trip. The expenses for the trip are shown below:

- lunches: $\frac{1}{4}$ of the money
- tickets: $\frac{2}{5}$ of the money
- snacks: 0.12 of the money
- transportation: 20% of the money

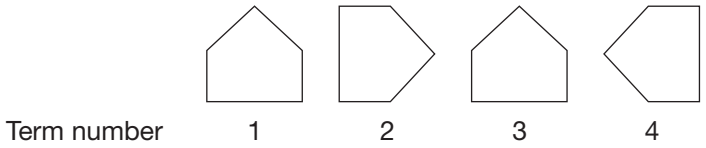
What fraction of the money is left over?

Show your work.

The fraction of the money left over is _____ .

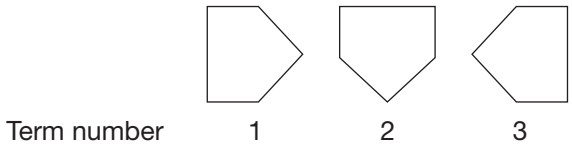
9 Pattern A is created by repeating the 4 terms below in order.

Pattern A



Pattern B is created by repeating the 3 terms below in order.

Pattern B

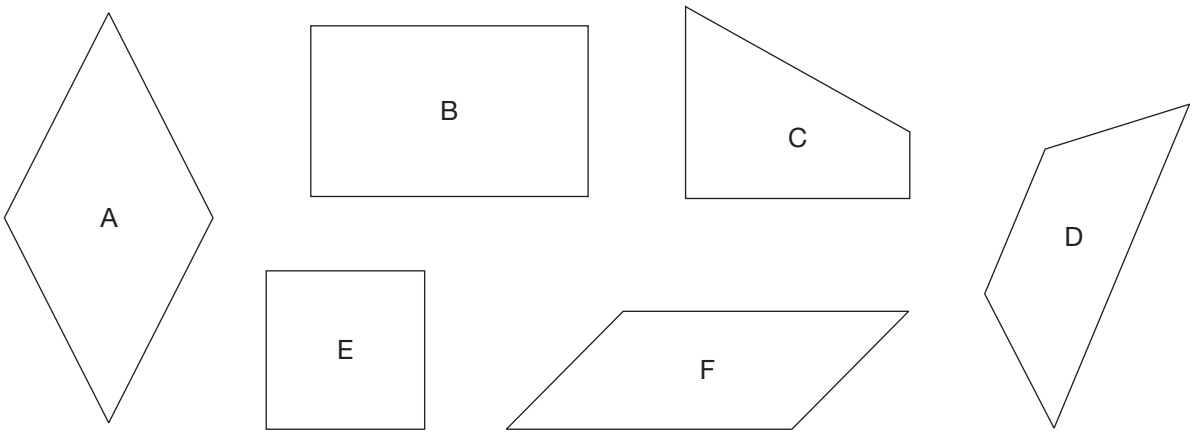


Find a term in both patterns that is the same and has the same term number.

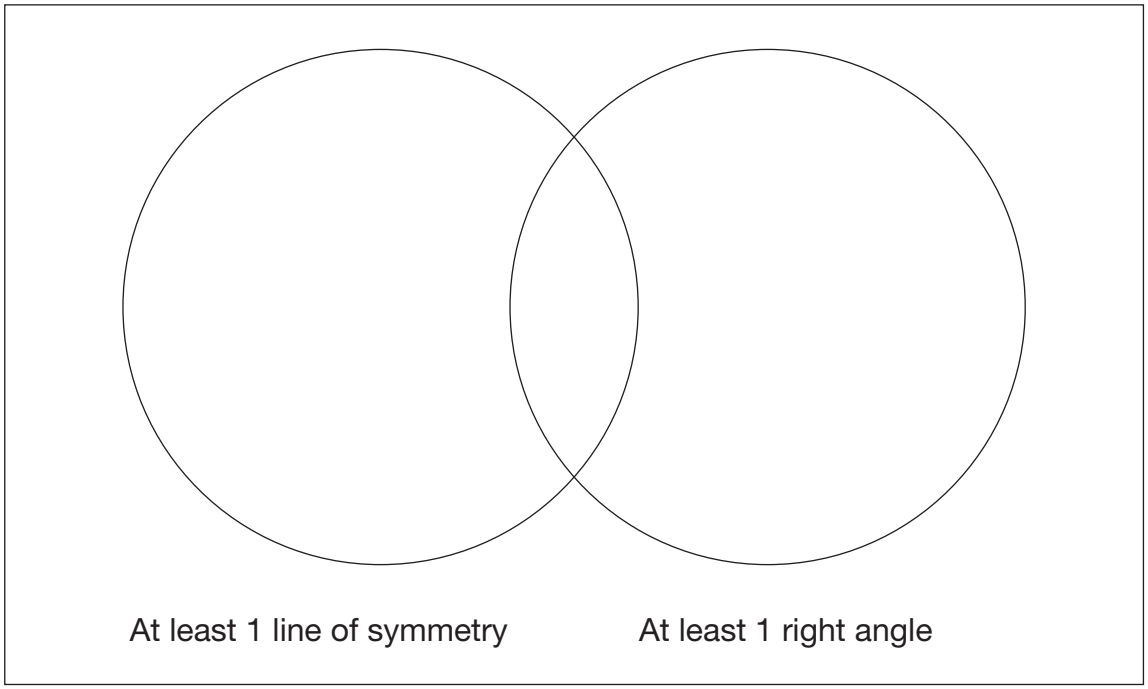
Show your work.

The term number is _____.

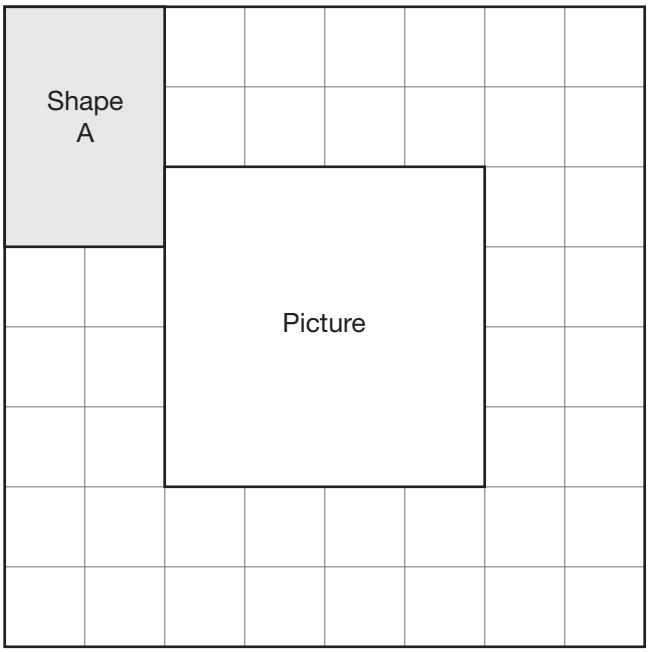
10 Consider the geometric shapes below.



Sort these shapes. Write their labels in the correct sections of the Venn diagram below.



11 Consider the border around the picture below.



Transform Shape A to cover the border with no gaps or overlaps. Draw any lines of reflection or points of rotation.

Complete the chart for the first 3 transformations you have drawn. Include directions of rotation or units of translation.

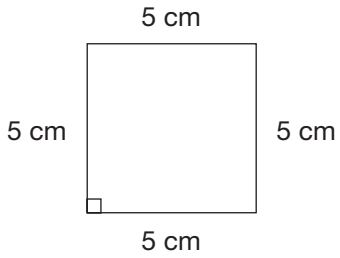
Transformation	Type of transformation	Description
1		
2		
3		

12 Which represents the number 93 050 in words?

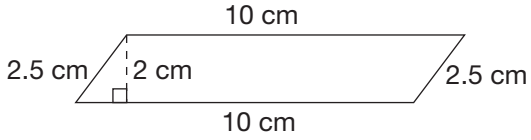
- **a** ninety-three thousand fifty
- **b** nine thousand three hundred five
- **c** nine thousand three hundred fifty
- **d** ninety-three thousand five hundred

13 Which of the following has an area of 25 cm^2 and a perimeter of 25 cm?

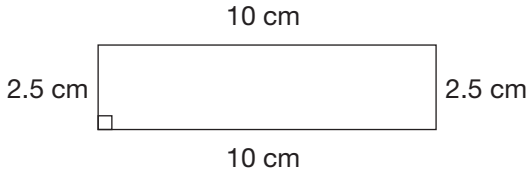
a



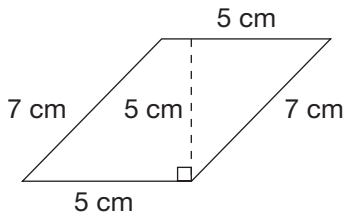
b



c



d



14 It takes 1 work day to repair 100 m of road.

At this rate, about how many work days will it take to repair 20 km of road?

- **a** 500
- **b** 200
- **c** 5
- **d** 2

15 The following data gives the minimum temperature for six days.

Temperature (°C)
18.0
16.0
18.0
23.0
18.0
24.0

What is the mean of these six temperatures?

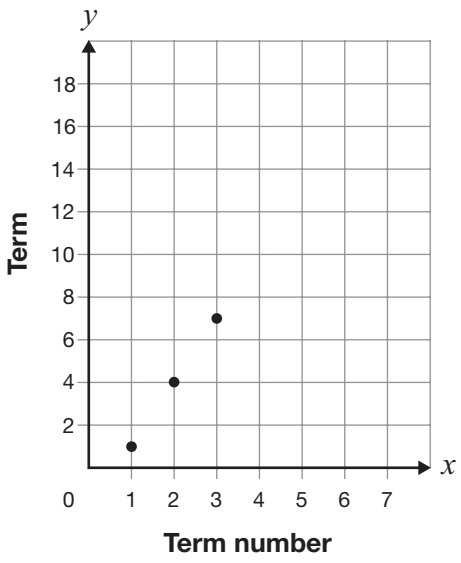
- **a** 18.0 °C
- **b** 18.5 °C
- **c** 19.5 °C
- **d** 24.0 °C

16 Consider the pattern rule below.

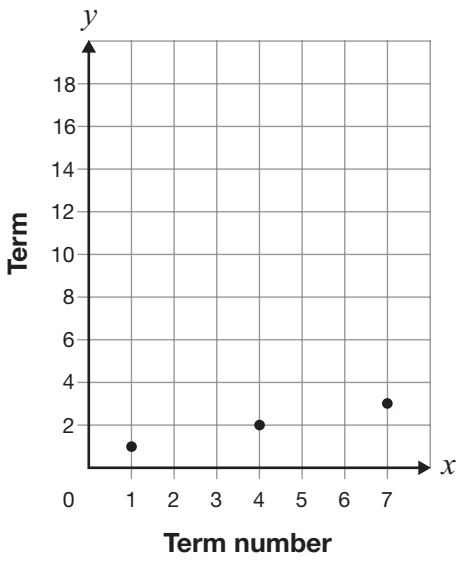
Start at 1, and then triple the term to get the next term.

Which graph represents this pattern?

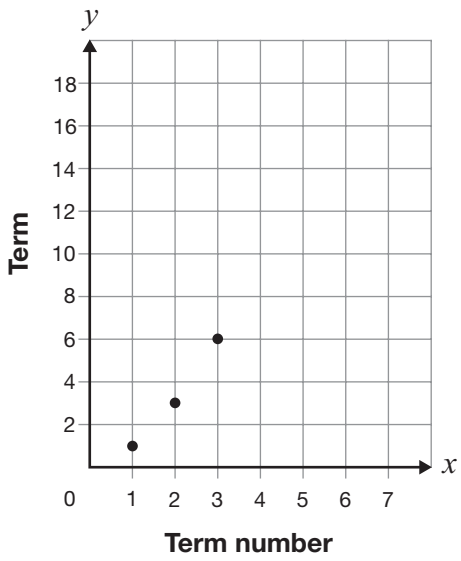
a



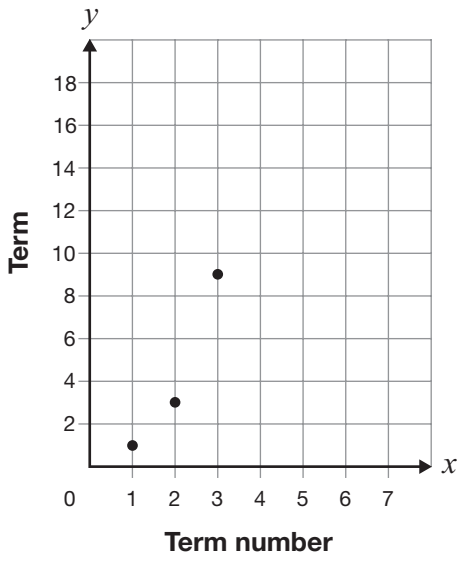
b



c



d



17 How many grams are in 1.5 kg?

a 1500 g

b 150 g

c 15 g

d 1.5 g

18 The chart below shows the first 4 terms of 4 non-repeating patterns.

Pattern	Terms
W	15, 18, 21, 24
X	960, 480, 240, 120
Y	2, 9, 16, 23
Z	85, 74, 63, 52

If the 4 patterns continue, which pattern will reach 30 first?

a Pattern W

b Pattern X

c Pattern Y

d Pattern Z

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