Student Booklet

MATHEMATICS

EQAO
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 is the most appropriate unit of measurement to describe the area of the floor of a gym?

a km^2

b cm^3

c m^2 *

d m^3

2 Joseph has a measuring wheel that clicks once for every metre he walks. How many times will the wheel click when Joseph walks 2.6 km?

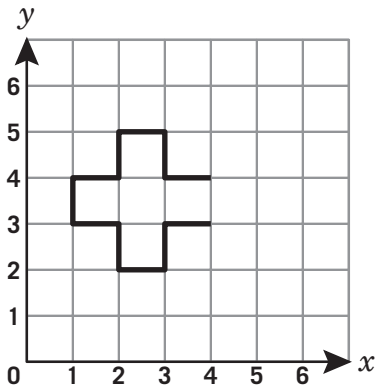
a 2

b 26

c 260

d 2600 *

3 Jacob draws most of an addition symbol on the Cartesian plane below.



Which two ordered pairs represent the location on the grid of the two points that should be connected to complete the addition symbol?

a (3, 4) and (4, 4)

b (4, 3) and (3, 3)

c (3, 4) and (4, 3)

d (4, 4) and (4, 3) *

4 Germaine buys one hamburger, one sandwich and two fruit salads.

Menu

Item	Amount
Hamburger	$3.50
Sandwich	$2.75
Fruit Salad	$1.60
Frozen Yogourt	$3.00

How much change should she receive from $20.00?

a $9.15

b $9.45

c $10.55 *

d $12.15

5 Which number, when placed in the box, makes the following number sentence true?

$15 - 6 \times 2 + 18 \div 3 = \square$

a 7

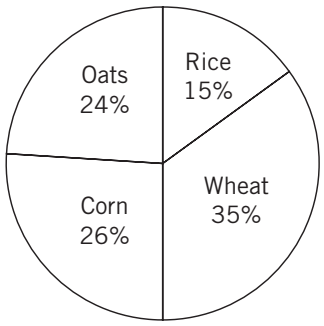
b 9 *

c 12

d 24

6 The graph below shows grain used to make cereal at a breakfast food factory.

Grain Used for Cereal



Based on the graph, which of the following statements is true?

- **a** The amount of wheat used is more than the combined amount of corn and oats.
- **b** The amount of corn used is more than the combined amount of oats and rice.
- **c** The combined amount of wheat and rice used is the same as the combined amount of corn and oats. *
- **d** The combined amount of oats and rice used is the same as the amount of wheat.

7 Examine the input-output table shown below.

Input	Output
2	5
3	8
4	11
6	17

Which of these rules describes the data?

- **a** Multiply by 2 and add 1.
- **b** Multiply by 4 and subtract 3.
- **c** Multiply by 2 and add 5.
- **d** Multiply by 3 and subtract 1.*

8 Pie is served at a picnic. Each pie is made up of 6 equal pieces. Bradley records the number of pieces each person eats in the table below.

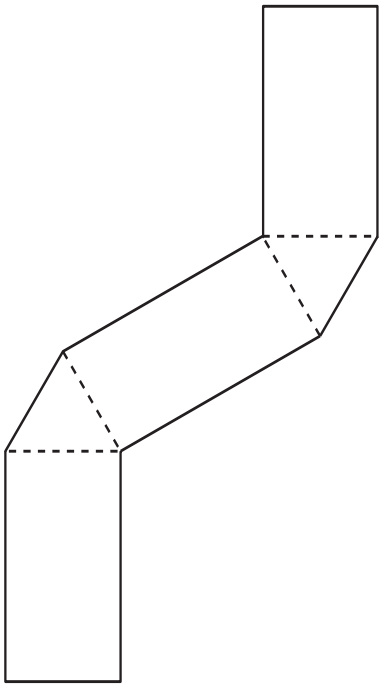
Name	Gurleen	Max	Ta-Shanya	Stewart	Brianne	Adrian
Number of Pieces Eaten	3	2	2	3	3	1

How many pies are eaten in total? Express your answer as a fraction.

Show your work.

They eat _____ pies.

9 Draw the three-dimensional figure that will be created when the following net is folded. Show all vertices and edges.



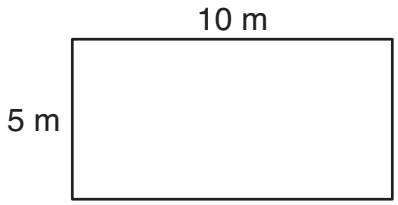
10 A spinner has 12 equal-sized sections. The sections are labelled 1 through 12.

What is the probability that Frieda will spin a multiple of 3 on her first spin?

Explain how you know.

The probability is _____.

11 Susie wants to tile the floor of her family's rectangular play room. The tiles she plans to use are 10 cm by 10 cm squares. A drawing of the room is shown below.

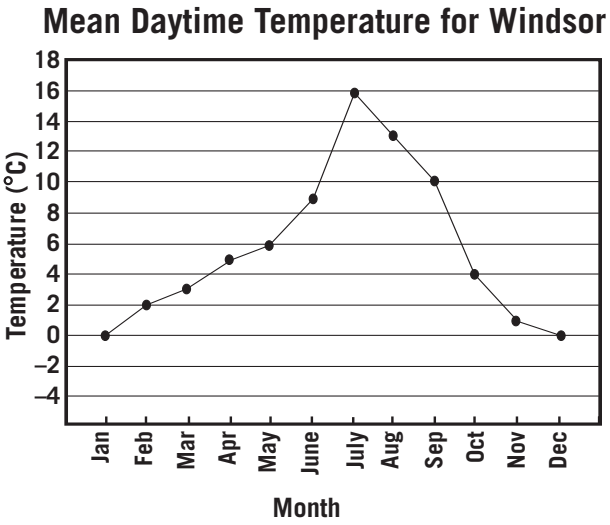


How many of the square tiles will Susie need to cover the floor of the play room?

Show your work.

Susie will need _____ tiles.

12 The graph below shows the mean daytime temperature for Windsor.



Which month has a mean daytime temperature that is twice April's?

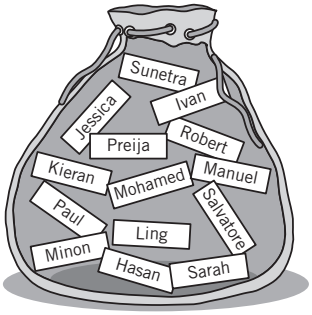
a July

b August

c September *

d October

13 To pick teams, the gym teacher puts the names of 8 boys and 6 girls in a bag, as shown below. The table shows the names.



Boys	Girls
Robert	Jessica
Ivan	Sarah
Hasan	Preija
Mohamed	Minon
Salvatore	Sunetra
Kieran	Ling
Paul	
Manuel	

The first 3 names picked at random from the bag were Paul, Jessica and Sarah. The names are not put back in. What is the probability that the next name picked at random will be a boy?

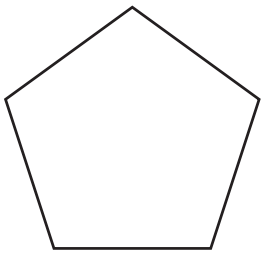
a $\frac{1}{2}$

b $\frac{7}{11}$ *

c $\frac{1}{7}$

d $\frac{8}{14}$

14 The regular pentagon shown below has 72° rotational symmetry.



How many 72° rotations will it take to return the vertices to their original positions?

a 1

b 2

c 4

d 5 *

15 A rectangular wall is being built. The table shows the dimensions of the wall after each day.

Wall Dimensions

Day	Height	Length
1	1 m	2 m
2	2 m	3 m
3	3 m	4 m
4	4 m	5 m

If the pattern continues, what will the perimeter of the wall be at the end of Day 10?

a 42 m *

b 38 m

c 21 m

d 19 m

16 The following pattern increases by following this rule: multiply the previous term by 3 and add 1.

5, 16, 49, 148, . . .

What is the next term in the sequence?

a 159

b 218

c 444

d 445 *

17 Which of the following is a factor of 70 but is not a prime number?

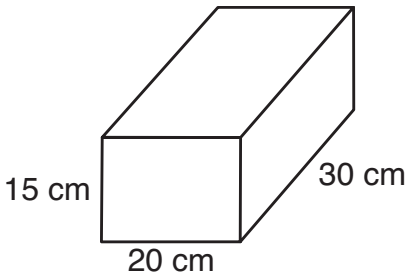
a 10 *

b 7

c 4

d 2

18 Four students calculate the volume of the shoe box shown below.



The following number sentences show the students' calculations. Which calculation is correct?

a $15 \text{ cm} \times 20 \text{ cm} = 300 \text{ cm}^2$

b $20 \text{ cm} \times 30 \text{ cm} = 600 \text{ cm}^2$

c $20 \text{ cm} + 30 \text{ cm} + 15 \text{ cm} = 65 \text{ cm}^3$

d $15 \text{ cm} \times 20 \text{ cm} \times 30 \text{ cm} = 9000 \text{ cm}^3$ *

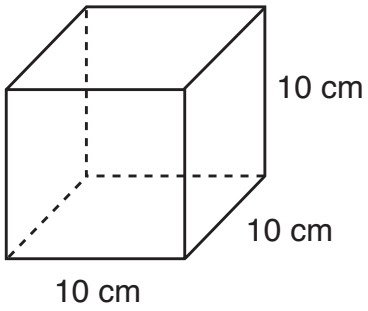
19 Which set is in order from least to greatest?

- **a** 1.153, 1.062, 0.13, 0.054
- **b** 0.13, 0.054, 1.162, 1.153
- **c** 0.054, 0.13, 1.153, 1.062
- **d** 0.054, 0.13, 1.062, 1.153 *

20 The results of a survey show that 30% of the people surveyed read a newspaper regularly. Which of the following numbers is equivalent to 30%?

- **a** 0.03
- **b** 3.0
- **c** $\frac{1}{3}$
- **d** $\frac{3}{10}$ *

21 A cube is shown below. It is 10 cm wide, 10 cm long and 10 cm high.



What is the area of one of the faces of the cube?

- **a** 10 cm^2
- **b** 30 cm^2
- **c** 100 cm^2 *
- **d** 1000 cm^2

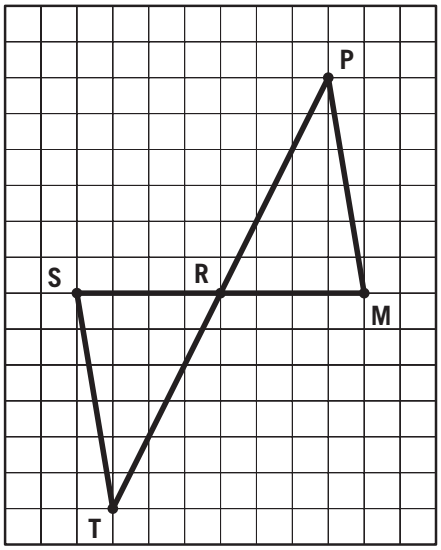
22 Sam buys 4 items in a store. The mass of each item is recorded below.

9000 mg, 400 g, 0.04 kg, 0.009 kg

Which item has the greatest mass?

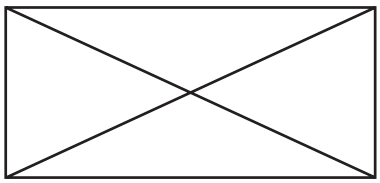
- **a** 9000 mg
- **b** 400 g *
- **c** 0.04 kg
- **d** 0.009 kg

23 Which answer best describes the transformation from ΔMPR to ΔRST?



- **a** Reflect about Point R.
- **b** Rotate $\frac{1}{4}$ turn clockwise about Point M.
- **c** Reflect about $\overline{RM}$.
- **d** Rotate $\frac{1}{2}$ turn about Point R. *

24 A drawing of the back of an envelope is shown below.



Which statement best describes the back of the envelope?

- **a** eight isosceles triangles
- **b** four equilateral triangles
- **c** a rectangle with two diagonals *
- **d** a parallelogram surrounded by a rectangle

25 Cary needs to set up 144 chairs in rows. Each row must have an equal number of chairs. Which of the following could be the method Cary uses to set up the chairs?

- **a** 14 rows of 10 chairs
- **b** 12 rows of 14 chairs
- **c** 6 rows of 21 chairs
- **d** 8 rows of 18 chairs *

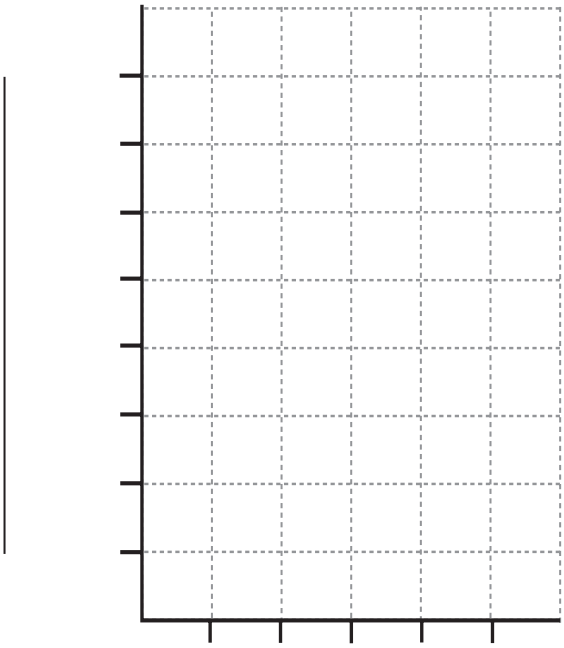
26 Johnna is planning a survey of students in her classroom. She wants to find their favourite food for lunch at school. Which of the following would be the best question for Johnna to ask in her survey?

- **a** "What is your favourite food?"
- **b** "What are your friends' favourite foods?"
- **c** "What is your favourite food for lunch at school?" *
- **d** "What is your favourite food—a sandwich or soup?"

27 Ranjit makes the chart below to record the amount of money collected during a fundraising event.

Day	Monday	Tuesday	Wednesday	Thursday	Friday
Amount of Money Collected	$50	$125	$75	$25	$175

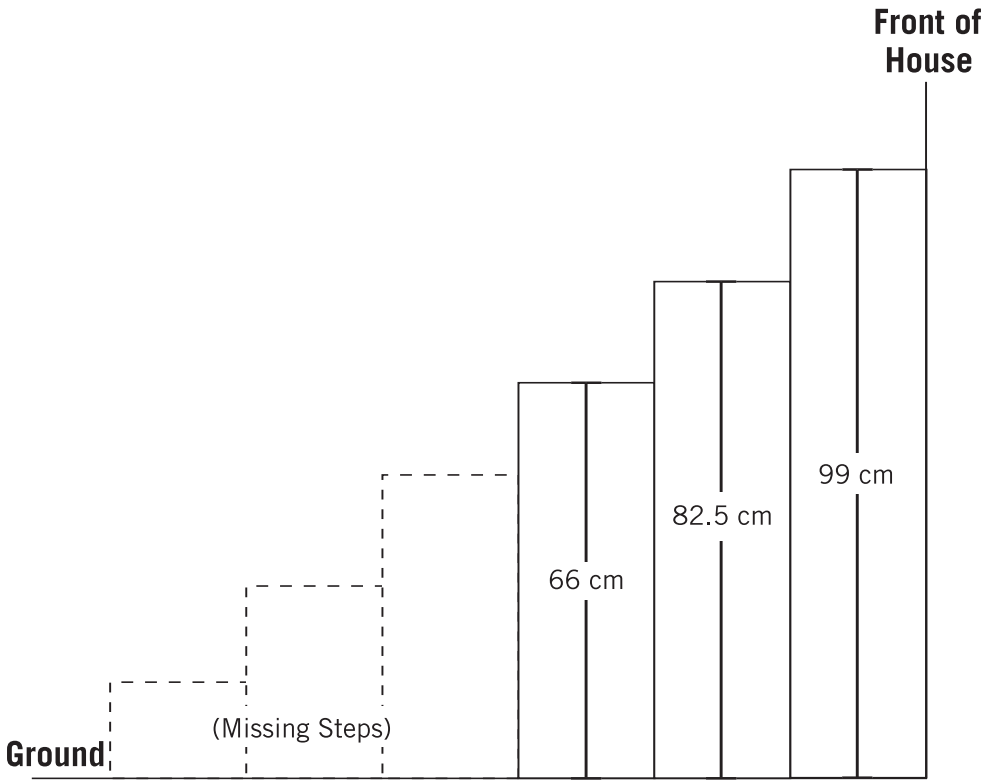
Make a broken-line graph to represent the data. Remember to include all titles and labels.



Explain your choice of scale.

28 A carpenter is replacing some missing steps at the front of Dena's house. The bottom three steps are missing. He wants to use the same heights for the new steps as the old steps. The carpenter measures the height from the ground to the top of each remaining step.

- The fourth step is 66 cm from the ground.
- The fifth step is 82.5 cm from the ground.
- The sixth step is 99 cm from the ground.



The carpenter plans to make each step increase by the same amount.

What are the heights of the first, second and third steps?

Show or explain your work.

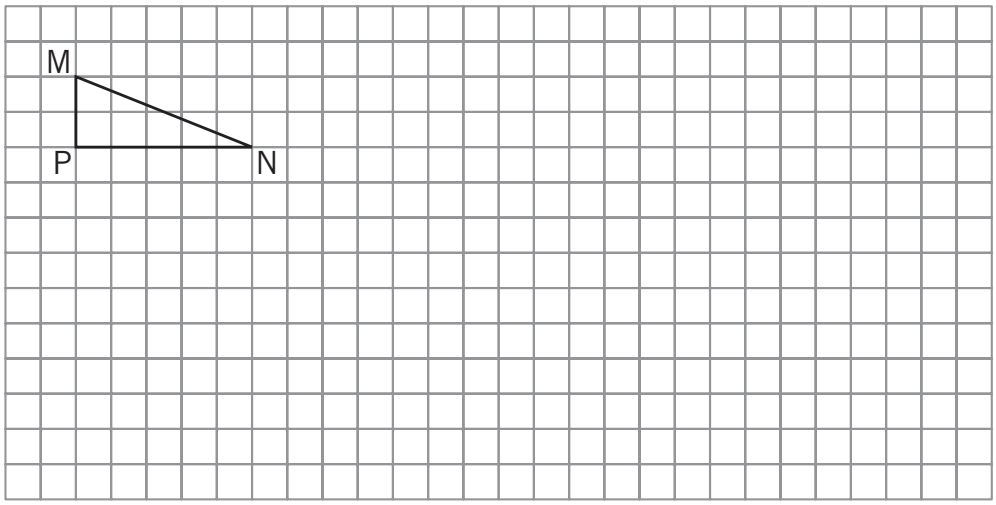
29 The rectangular ceiling of a room has an area of 36 m^2. The ceiling needs 3 coats of paint. Each can of paint covers 25 m^2.

About how many cans of paint are needed to paint the ceiling?

Explain your thinking.

____ cans of paint are needed.

30 Use two transformations of different types to move the triangle on the grid below to a new position. Show both transformations and label M, N and P on the new figure.



Explain your two transformations, using the correct name for each transformation.

31 In a hockey arena, the first row has 276 seats, the second row has 288 seats and the third row has 300 seats. Each row after this continues to increase by the same number. If the arena has a total of 6 rows, how many seats are in the arena?

a 1836 *

b 1176

c 972

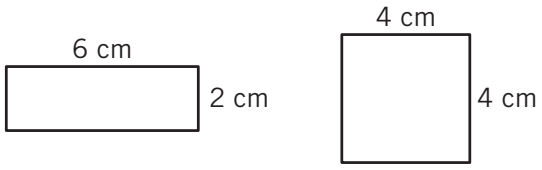
d 312

32 Ms. Vanstone asks her students to draw a rectangle and a square with the areas and perimeters given below.

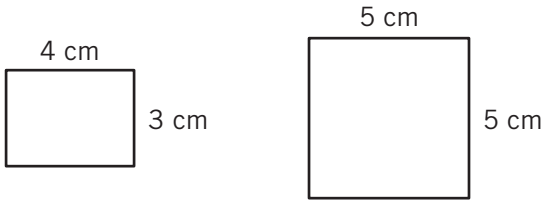
	Rectangle	**Square**
Area	12 cm^2	25 cm^2
Perimeter	16 cm	20 cm

Which shows two correct drawings?

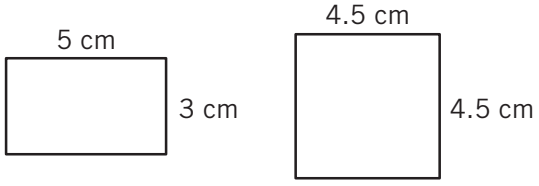
a



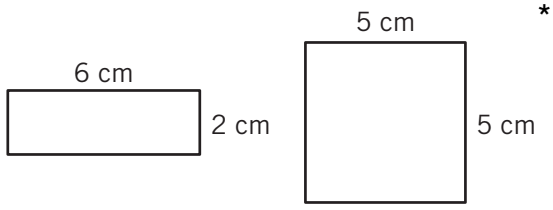
b



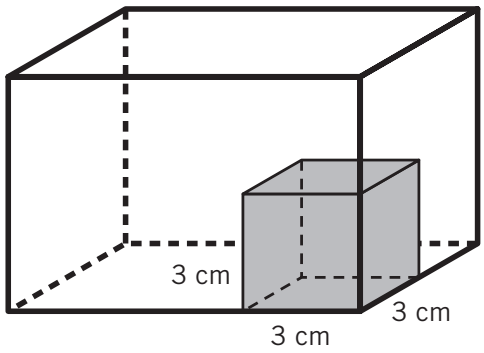
c



d *



33 Twelve cubes measuring 3 cm by 3 cm by 3 cm fit perfectly into the rectangular prism shown below.



What is the volume of the rectangular prism in cm^3?

- **a** 36 cm^3
- **b** 162 cm^3
- **c** 288 cm^3
- **d** 324 cm^3 *

34 What value, when placed in the box, would make the following equation true?

$6 \times \square - 4 = 56 + 6$

- **a** 10
- **b** 11 *
- **c** 31
- **d** 62

35 The same number is added to each term in a pattern to get the value of the next term. Below are the fourth, fifth and sixth terms in the pattern.

… 95, 98, 101, …

What are the first, second and third terms in the pattern?

- **a** 83, 85, 87
- **b** 83, 86, 89
- **c** 86, 88, 92
- **d** 86, 89, 92 *

36 Chloe's parents are buying a car. They want to pick 1 colour at random from 4 possible car colours. Which of the following methods should they use?

- **a** Flip a coin.
- **b** Toss a 6-sided number cube with 1 through 6 on the faces.
- **c** Use a spinner with 4 equal-sized sections labelled with the 4 possible colours. *
- **d** Pick one card from 10 cards with 1 of the 4 colours written on each face.

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