

NUMERACY

CALCULATOR ALLOWED



YEAR
7
2016



SESSION 1

40 min

Time available for students to
complete test: 40 minutes

Use 2B or HB
pencil **only**





1

Grace is 16 years old.

Mark is 5 years more than twice Grace's age.

How old is Mark?

42

82

23

37

2

When keeping horses, 1 hectare of land is recommended for every 2 horses.

How many hectares of land would be needed for 8 horses?

4

6

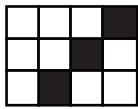
10

16

3

Nathan is making a pattern with black and white tiles.

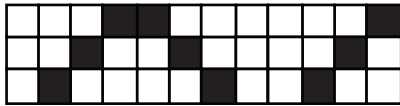
Design 1



Design 2



Design 3



Design 4



If the pattern continues, how many black tiles will there be in Design 10?

3

15

30

33

4

Jane makes necklaces using beads.

She has 345 beads in 23 different colours.

She has the same number of beads in each colour.

How many beads does Jane have of each colour?

beads



5

Tammy left her house at 8:35 in the morning and did not return until 4:45 in the afternoon.

How long was Tammy away from her house?

- 3 hours 50 minutes
- 4 hours 10 minutes
- 7 hours 50 minutes
- 8 hours 10 minutes
- 13 hours 20 minutes

6

A scientist is studying mice.

Which unit would be the most appropriate to record the mass of a mouse?

litre

millimetre

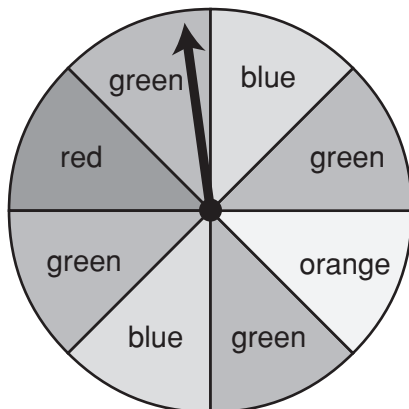
gram

kilogram

7

Lucas is playing a game with the spinner shown.

He will win if the arrow stops in a blue section.



What is the probability that Lucas will win the game on his next spin?

$\frac{1}{2}$

$\frac{1}{3}$

$\frac{1}{4}$

$\frac{1}{8}$



8

Mike had 4 cups of rice.

He used $\frac{1}{2}$ cup of rice for one recipe and $1\frac{1}{4}$ cups of rice for another recipe.

How many cups of rice did Mike have left?

$1\frac{1}{4}$

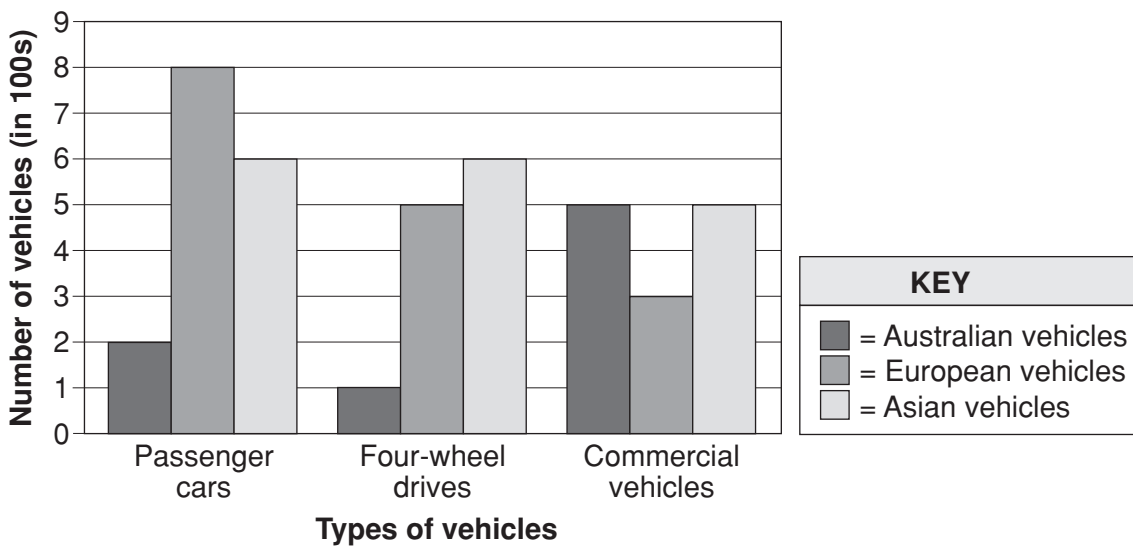
$2\frac{1}{4}$

$2\frac{1}{2}$

$5\frac{3}{4}$

9

The graph shows the origin and type of all vehicles in a town.



Which statement is most accurate based on the graph?

- There are more four-wheel drives than passenger cars.
- Commercial vehicles are the most common type of vehicles.
- There are more Asian vehicles than European vehicles.
- There are more Australian vehicles than European vehicles.

10

Mary had 1 kilogram of cheese.

She used $\frac{1}{4}$ kilogram for sandwiches.

Which of these shows how much cheese she had left?

0.25 kg

0.3 kg

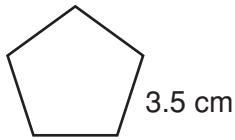
0.34 kg

0.75 kg

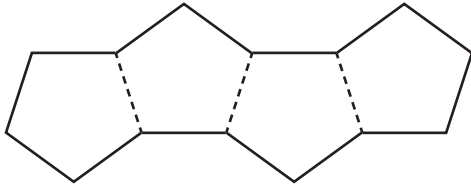


11

This tile has equal length sides.



Four of the tiles joined together make a larger shape as shown.



What is the perimeter of the larger shape?

42 cm

49 cm

56 cm

70 cm

12

Numbers such as 4, 16, 64, 81 and 100 are called square numbers.

Select the statement that is always true about square numbers.

- A square number multiplied by a square number is a square number.
- A square number divided by a square number is a square number.
- The sum of a square number and a square number is a square number.
- The difference between a square number and a square number is a square number.

13

Ethan plans to steadily increase the time he exercises each day.

His plan is shown below.

	Monday	Tuesday	Wednesday	Thursday
Exercise time	20 minutes	30 minutes	45 minutes	67.5 minutes

Which statement about Ethan's plan is true?

Ethan plans to exercise:

- 10 times longer than the previous day.
- 10 minutes longer than the previous day.
- 1.5 times longer than the previous day.
- 1.5 minutes longer than the previous day.



14

A baker uses 12.5 kilograms of flour each day.
Flour costs \$3.62 per kilogram.



What is the cost of the flour used each day?

\$

15

Mason's receipt from an electronics store was torn and part of it was lost.

One-Stop Electronics Store		
Quantity	Item	Cost
2	10-pack batteries	
4	USB cable	
1	16 GB flash drive	
Total for 7 items		Total amount

He knew:

- each 10-pack of batteries cost just under \$6
- each USB cable cost just under \$11

His credit card statement showed that he spent \$72.40 at the electronics store.

About how much did the flash drive cost?

\$5

\$16

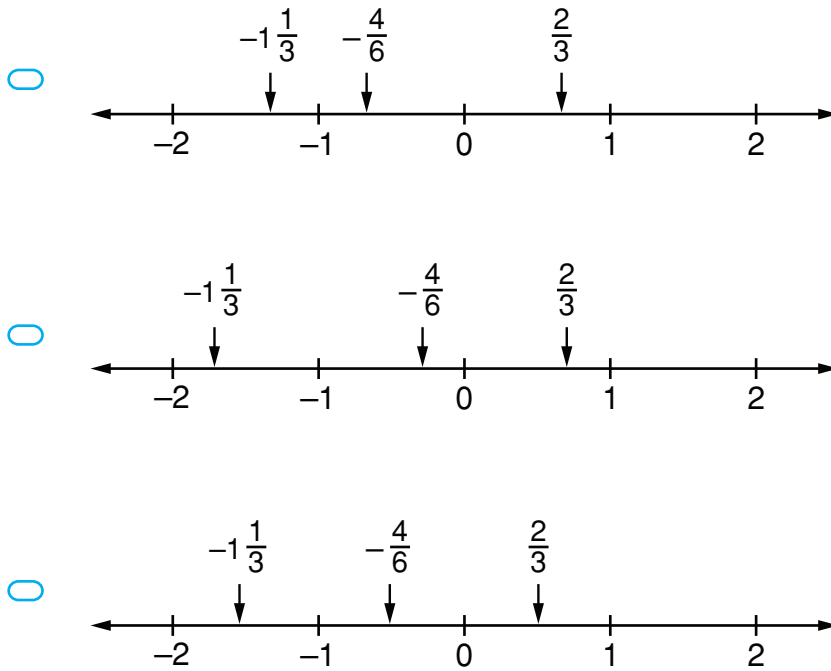
\$28

\$55



16

Which number line shows the correct locations of $\frac{2}{3}$, $-\frac{4}{6}$, and $-1\frac{1}{3}$?



17

Each day a factory produces 1250 cans of chicken soup and 1300 cans of vegetable soup.

Each can contains 400 grams of soup.

How many kilograms of soup does the factory produce in one day?

- 10.2 kilograms
- 20 kilograms
- 500 kilograms
- 1020 kilograms



18

Flynn asked each of his classmates, ‘What is your favourite sport?’

This table shows the results.

Sport	Number of classmates
Tennis	10
Netball	13
Soccer	9

What is the probability that a randomly selected classmate’s favourite sport is netball?

Round your answer to the nearest hundredth.

0.13

0.41

0.59

0.68

19

Sophia wants to buy the type of pasta that is the best value.

Which type of pasta costs the least per gram?

- Pasta shells 150 g for \$2
- Pasta spirals 250 g for \$2
- Spaghetti 400 g for \$3
- Fettucini 500 g for \$5

20

Leo recorded the number of pages he printed over five weeks.

17, 22, 17, 24, 20

What is the mean number of pages Leo printed?



21

A jam recipe uses 2 cups of sugar for every 3 cups of fruit.

Select the correct combination of sugar and fruit for this recipe.

- $\frac{1}{2}$ cup of sugar, $\frac{1}{3}$ cup of fruit
- 1 cup of sugar, 1.5 cups of fruit
- 1.5 cups of sugar, 2.5 cups of fruit
- 4 cups of sugar, 5 cups of fruit

22

A class is making crystals using sugar-water and string.

Each student needs 0.25 litres of sugar-water for the experiment.

How many millilitres of sugar-water does each student need?

millilitres

23

The table below lists the original price and the amount of discount of the same shirt at four different shops.

SHIRT SALE		
Shop	Original price	Discount
A	\$20	25%
B	\$24	$\frac{1}{3}$
C	\$30	30%
D	\$18	\$2 off

Which shop has the lowest sale price for the shirt?

A

B

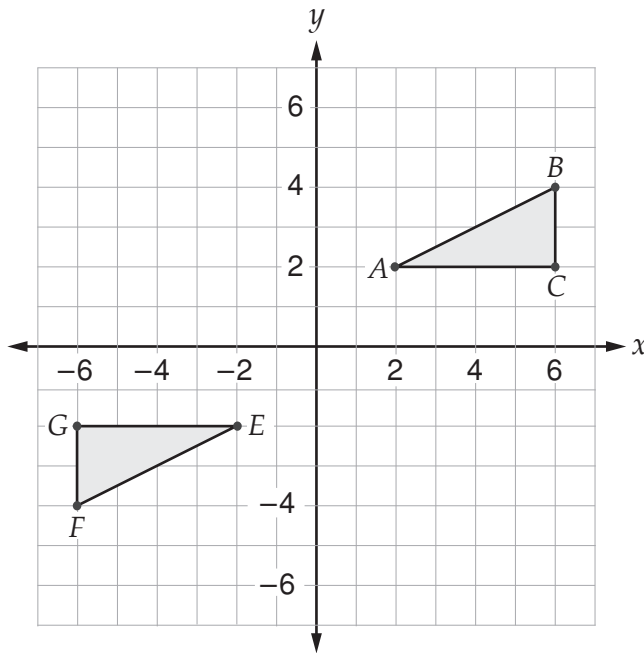
C

D



24

Triangle ABC is moved to the new position shown by triangle EFG .

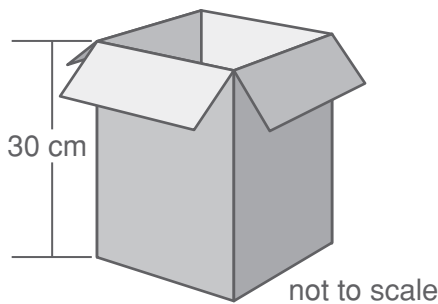


Which of these transformations resulted in the new position?

- Rotate $\triangle ABC$ 180° clockwise about the origin.
- Rotate $\triangle ABC$ 270° clockwise about the origin.
- Reflect $\triangle ABC$ across the x -axis, then translate 4 units left.
- Reflect $\triangle ABC$ across the y -axis, then translate 4 units down.

25

Lily has a box with a volume of 6750 cm^3 and a height of 30 cm.



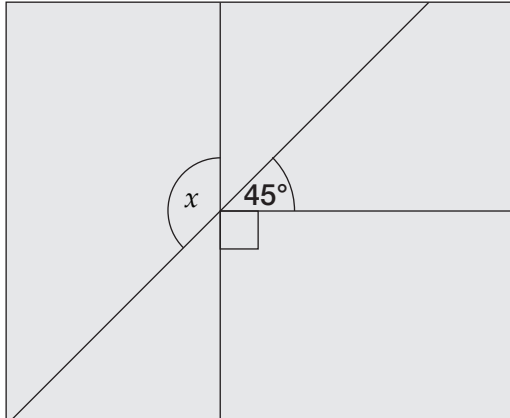
Which of these could be the length and width for the box?

- 9 cm \times 25 cm
 15 cm \times 20 cm
 25 cm \times 13 cm
 30 cm \times 15 cm



26

Ruby designs a rectangular picture for her wall.
Inside her rectangle, she adds three straight lines as shown.



What is the size of angle x ?

degrees

27

Gina is organising a sausage sizzle for her netball team.
She will buy the rolls in bags of a dozen.
She notices the more rolls she buys, the less it costs per bag.

Cost of bags of rolls	
Number of bags	Cost
1	\$8.50
2	\$16.50
3	\$24.00
4	\$31.00
5	\$37.50

If this price pattern continues, how much will it cost for 7 bags of rolls?

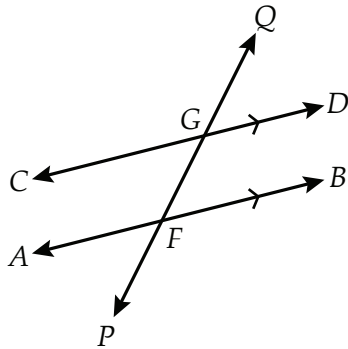
\$



28

Lines AB and CD are parallel.

Line PQ intersects lines AB and CD as shown.



Which pair of angles are equal?

- $\angle DGQ$ and $\angle DGP$
- $\angle CGP$ and $\angle AFQ$
- $\angle QGC$ and $\angle QGD$
- $\angle PGC$ and $\angle PFA$

29

A school vegetable garden has:

- 4 lettuce plants
- 2 less capsicum plants than spinach plants
- 4 times as many spinach plants as lettuce plants
- 1 parsley plant, 1 sage plant and 1 basil plant and
- the number of spinach plants is a quarter of the number of tomato plants.

How many plants are growing in the school vegetable garden?

30

Mona is travelling to visit her sister who lives 175 kilometres away.

Her car uses 6.85 litres of fuel per 100 kilometres.

How much fuel will Mona need to travel to her sister's house?

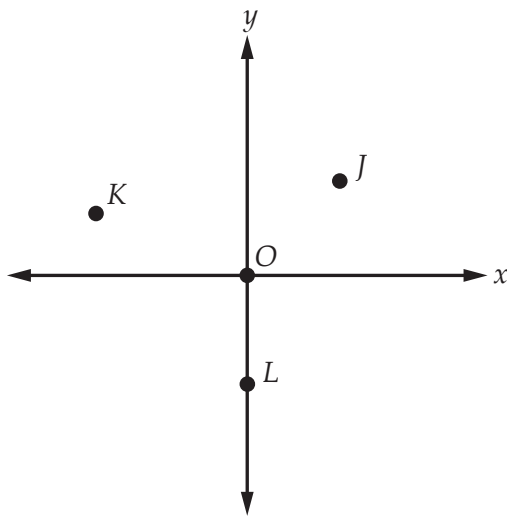
Round your answer to the nearest litre.

 litres



31

A Cartesian plane is shown.



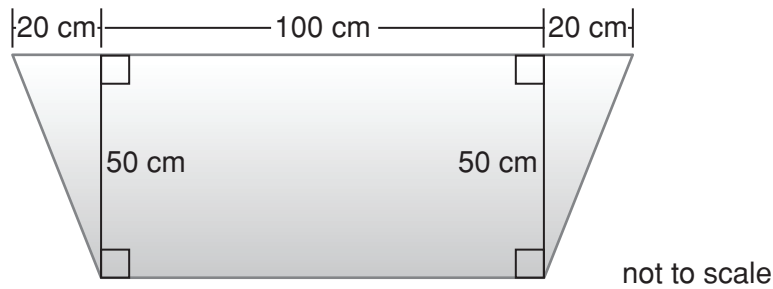
Select the correct statement below.

- O is located where $x = 0$ and $y < 0$.
- J is located where $x > 0$ and $y < 0$.
- K is located where $x < 0$ and $y > 0$.
- L is located where $x < 0$ and $y = 0$.

32

The headboard on Alice's bed is in the shape of a trapezium.

To paint the headboard Alice needs to calculate the area.



What is the area of her headboard?

cm²

STOP – END OF TEST

Do not turn this page.