YEAR 9 2016

NUMERACY
NON-CALCULATOR

YEAR 9 NUMERACY (NON-CALCULATOR)

1 A shop sells balloons in bags of five.

For a party, 20 balloons are needed.

How many bags of balloons are needed?

4	5	25	100
⚬	⚬	⚬	⚬

2 Joe measures a distance to be 5 metres and 12 centimetres.

Which of these shows how Joe can write this measurement in metres?

| 5.012 m	5.12 m	6.12 m	6.2 m
⚬	⚬	⚬	⚬

3 A bag contains 15 beads that are either red or yellow.

The probability of randomly removing a red bead is 20%.

What is the probability of randomly removing a yellow bead?
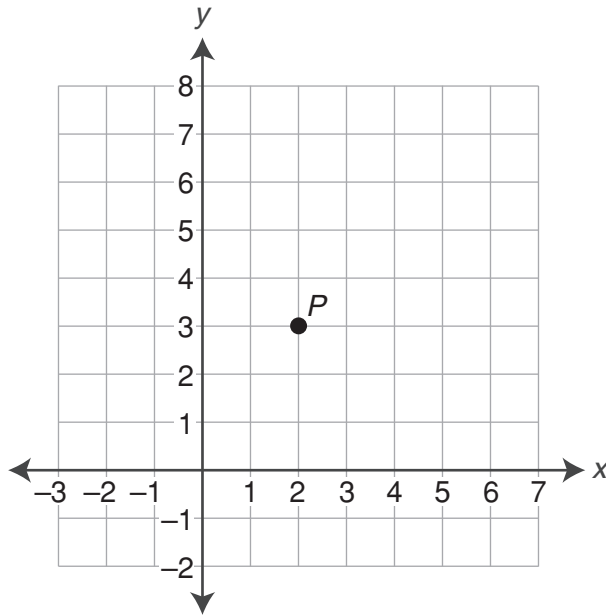
☐ %

4 Amelia wants to find the number of people who are enrolled in either a music class or a drama class but not both.

Which shaded region in the Venn diagrams represents the information Amelia is looking for?

⚬

⚬

⚬

⚬
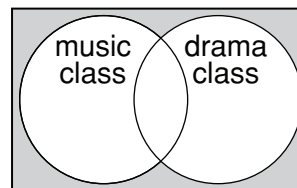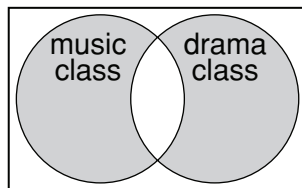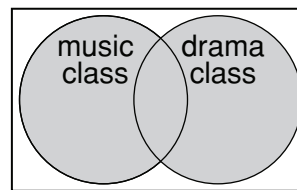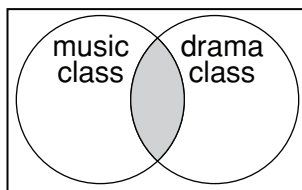
5 Point *P* is translated down 4 units.

What are the coordinates of the new position of point *P*?
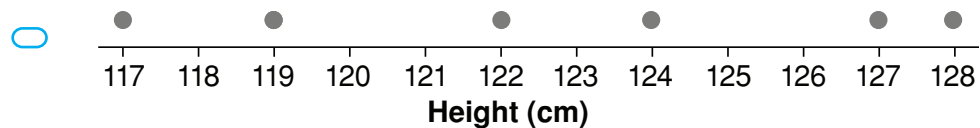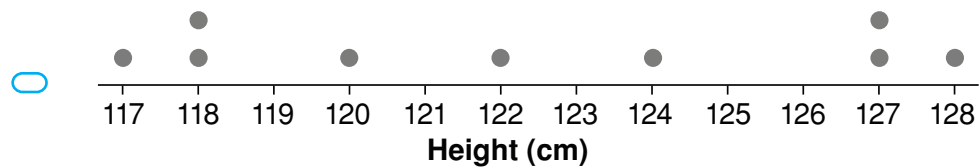
| (2, –1) | (2, 7) | (6, 3) | (–2, 3) |
| ○ | ○ | ○ | ○ |

6 The heights, in centimetres, of children on the tennis team are as follows:

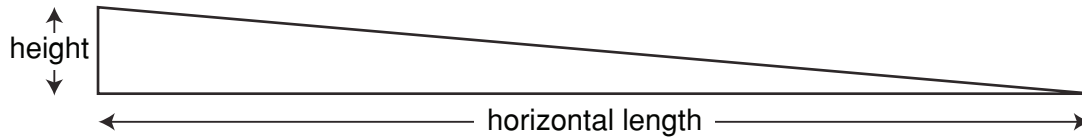119, 122, 119, 127, 127, 117, 128, 124, 127

Select the dot plot that correctly displays the data.

7

Beth made a ramp to replace a set of steps that were 0.5 metres high.

The ratio of the horizontal length of the ramp to its height is 12:1.

height

horizontal length

What is the horizontal length of the ramp?

5 metres	6 metres	24 metres	60 metres
◯	◯	◯	◯

8

Tom joins a gym that has a monthly fee of $56.

Members pay an extra $6 per session if they want to work with a gym trainer.

Which expression represents Tom's monthly gym bill if he works with a trainer for x sessions during the month?

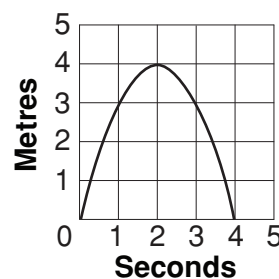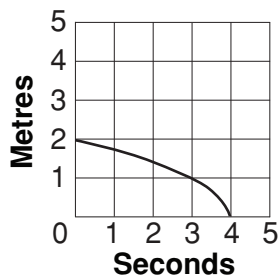| $6x$	$56x$	$56x + 6$	$56 + 6x$
◯	◯	◯	◯

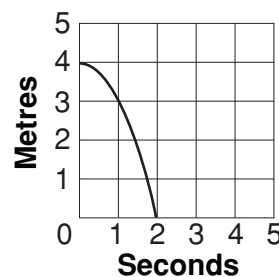**9**

Grace throws a ball from a height of 2 metres.

- The maximum height of the ball after it is thrown is 4 metres.
- The ball lands on the ground about 2 seconds after it is thrown.
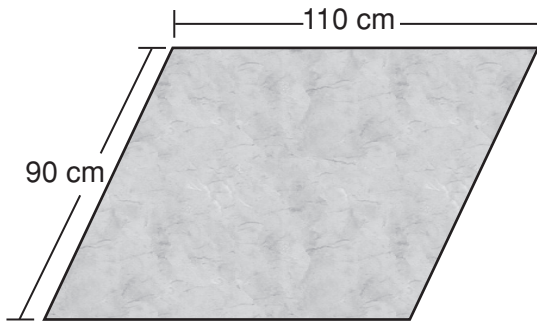
Which graph represents the path of Grace's ball?

◯

◯

◯

◯

10 Riley is building a table top in the shape of a parallelogram.

— 110 cm —
90 cm

What is the perimeter of the table top?

200 cm	400 cm	440 cm	9900 cm
⬭	⬭	⬭	⬭

11 The diameter of a red blood cell is 0.0076 mm.

Which of these shows the diameter in scientific notation?

7.6×10^{-3}	7.6×10^{-2}	7.6×10^{2}	7.6×10^{3}
⬭	⬭	⬭	⬭

12 Jane and David had identical chocolate bars.

David ate $\frac{7}{8}$ of his chocolate bar.

Jane ate more of her chocolate bar than David.

What fraction of her chocolate bar could Jane have eaten?

$\frac{6}{7}$	$\frac{7}{9}$	$\frac{8}{9}$	$\frac{8}{10}$
⬭	⬭	⬭	⬭

13 Monti and Tarra buy pencils for school.

Tarra buys 2 times the number of pencils Monti buys plus an additional 4 pencils.

Let m be the number of pencils Monti buys.

Which expression shows the number of pencils Tarra buys?

$(2 \times m) + 4$	$2 + (4 \times m)$	$(m \div 2) - 4$	$2 - (m \div 4)$
⬭	⬭	⬭	⬭

14

A fair $1 coin and a fair $2 coin are tossed at the same time.

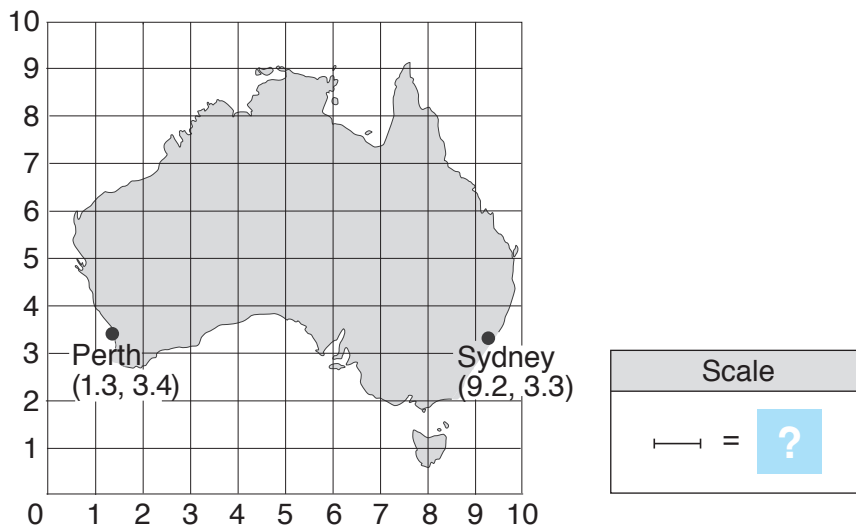What is the probability that both coins will show tails?

$$\frac{1}{6} \qquad \frac{1}{4} \qquad \frac{1}{3} \qquad \frac{1}{2}$$

◯ ◯ ◯ ◯

15

Myra draws a scale map of Australia on a coordinate grid.

Perth (1.3, 3.4)

Sydney (9.2, 3.3)

Scale

⊢——⊣ = **?**

She knows that the actual distance between Perth and Sydney is 3294 kilometres.

Which scale should Myra use for her map?

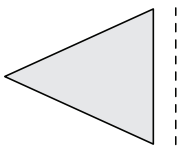⊢——⊣ = 78 km ⊢——⊣ = 262 km ⊢——⊣ = 400 km ⊢——⊣ = 500 km
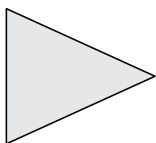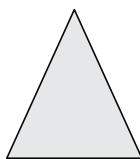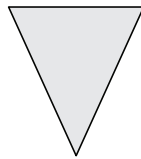
◯ ◯ ◯ ◯

16

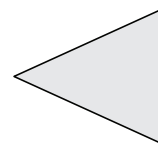This triangle is reflected across the dotted line and then rotated 90° clockwise.

What is the resulting image of the triangle?

◯ ◯ ◯ ◯

17

The mean age of employees at a company is 40.

The median age of employees at the same company is 35.

A new employee is hired who is 55 years old.

Which of these is possible?

○   The mean age stays the same and the median age increases.

○   The mean age stays the same and the median age decreases.

○   The mean age decreases and the median age increases.

○   The mean age increases and the median age stays the same.

18

Vicki and Anya are saving money for a holiday.

Vicki has $300 and plans to save $20 each week.

Anya has $250 and plans to save $30 each week.

After how many weeks will Vicki and Anya have saved the same amount?

weeks

19
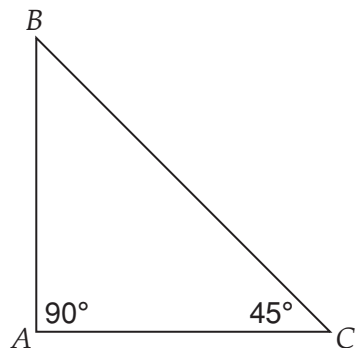
Select the statement that is true about triangle ABC.

○   Triangle ABC is a scalene triangle.

○   Triangle ABC is an isosceles triangle.

○   Triangle ABC is an equilateral triangle.

○   Triangle ABC is an obtuse triangle.

20 A group of 105 people were asked if they are left-handed or right-handed.

This table shows the results.

	Left-handed	Right-handed	Total
Men	15	35	50
Women	10	45	55
Total	25	80	105

A man was selected at random.

What is the probability that he is left-handed?

0.14	0.24	0.30	0.60
◯	◯	◯	◯

21 Which of the following is always equal to $x - y$?

$-x - y$	$-x + y$	$y - x$	$-y + x$
◯	◯	◯	◯

22 A plan of the lawn in Pat's backyard is shown.

3 m

not to scale

2 m   3 m
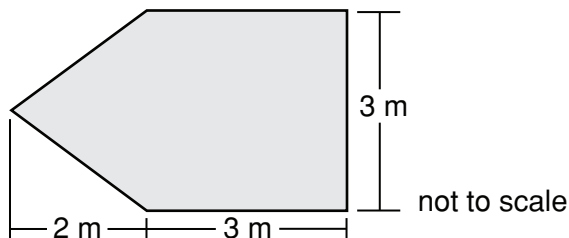
Pat wants to fertilise the lawn in her backyard and needs to know the total area.

What is the total area of Pat's lawn, in square metres?

[ ] m^2

23 Glen has 6 cups of sugar. A biscuit recipe uses $\frac{3}{4}$ of a cup of sugar for each batch.

What is the greatest number of batches Glen can make?

6	$6\frac{3}{4}$	$7\frac{1}{2}$	8	12
◯	◯	◯	◯	◯

24 Paul is playing a 'Guess My Number' game.

He gives these clues about his number.

> My number is a square number.
> My number is divisible by 2 and 9.
> My number has 2 digits.

What is Paul's number?

[   ]

25 Leslie has read $\frac{5}{8}$ of a 256-page book.

Which decimal shows how much of the book Leslie has read?

0.160	0.320	0.375	0.580	0.625
◯	◯	◯	◯	◯

26 Jason wants to multiply 35 × 62.

Which of these expressions will give Jason the correct answer?

- ◯ (30 × 60) + (5 × 2)
- ◯ (30 × 2) + (60 × 5)
- ◯ (30 × 62) + (5 × 62)
- ◯ (30 × 60) + (30 × 2) + (60 × 5)

27 Holly is saving to buy her first car.

She created a table to keep track of her savings.

Number of months (x)	2	5	8	10
Amount in Holly's savings account (y)	310	430	550	630

Complete the rule for the linear relationship between the amount of money in Holly's savings account and the number of months of saving.

$y = $ ☐ $x + 230$

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28 Michelle bought a pair of sunglasses which cost $19.50 before the Goods and Services Tax (GST) was added.

How much did Michelle's sunglasses cost after adding the 10% GST?

$ ☐

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29 Harper has a tablecloth with an area of 3 square metres.

What is the area of his tablecloth in square centimetres?

9 cm² 30 cm² 300 cm² 30 000 cm² 90 000 cm²
○　　　　○　　　　○　　　　○　　　　○

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30 Sam rents a truck from a hire company.

The cost to rent the truck is directly proportional to the number of kilometres driven.

The rental cost to drive 200 km is $87.50.
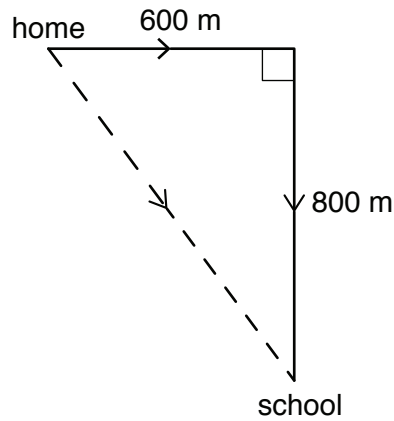
What is the rental cost to drive 80 kilometres?

$ ☐

31 Mona can walk from home to school following the roads, or she can cut across a vacant block as shown in the diagram below.

Along the roads she walks 600 metres east and 800 metres south.

How many metres less does she walk by going across the vacant block?

☐ m

32 This table shows the receiving areas of two large radio telescopes.

Name of telescope	Receiving area
SKA	1 square kilometre
ASKAP	4000 square metres

What is the ratio of the receiving area of the ASKAP telescope to the receiving area of the SKA telescope?

4:1	2:5	1:200	1:250	4000:1
◯	◯	◯	◯	◯

STOP – END OF TEST