



Year 9 Numeracy

Calculator allowed

Full-length Test 10

Writing time: 40 minutes

Use 2B pencil only

Instructions

- Write your **student name** in the space provided.
- You must be silent during the test.
- If you need to speak to the teacher, raise your hand. Do not speak to other students.
- Answer all questions using a 2B pencil.
- If you wish to change your answer, erase it very thoroughly and then write your new answer.
- Students are permitted to bring a calculator into the test room.

Student name:

QUESTION 1

Which expression is equivalent to $6 - 5t$?

☐ $5t - 6$

☐ $6t - 5$

☐ $-6 + 5t$

☒ $-5t + 6$

SHADE ONE BOX

**QUESTION 2**

What does $4^3 - 5^2 = ?$

☒ 39

☐ 31

☐ 2

☐ -1

SHADE ONE BOX

**QUESTION 3**

Which of the following is the smallest number?

☐ $\frac{8}{5}$

☐ $1\frac{1}{3}$

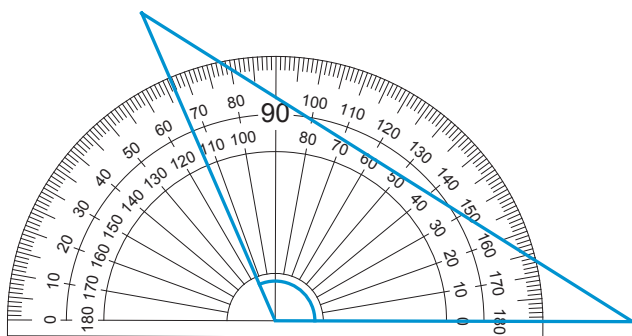
☒ $\frac{11}{9}$

☐ 1.4

SHADE ONE BOX

**QUESTION 4**

What is the size of the marked angle in this triangle?



113°

WRITE YOUR OWN ANSWER

**QUESTION 5**

A chef at a restaurant makes an 8 L pot of soup to serve for entrees one evening. He dishes out the soup into bowls that hold 300 mL. How many full servings of soup can be served in his restaurant tonight?

☒ 26

☐ 27

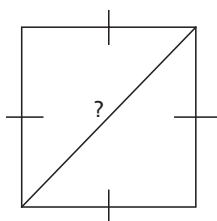
☐ 37

☐ 38

SHADE ONE BOX

**QUESTION 6**

A square has an area of 121 cm^2 . What is the length of its diagonal closest to?



☐ 10 cm

☐ 11 cm

☒ 16 cm

☐ 18 cm

SHADE ONE BOX



QUESTION 7

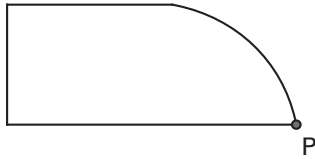
SHADE ONE BOX

A blue whale weighs 80 tonnes. It eats 4 tonnes of krill each day. What percentage of its own weight does it eat each day?

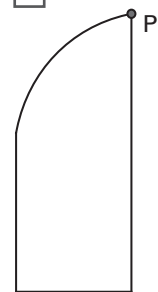
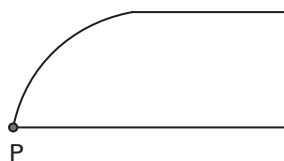
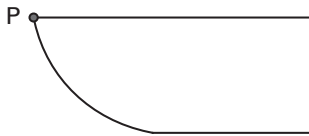
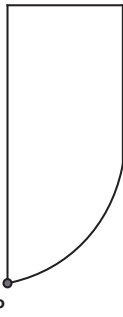
☒ 5%☐ 8%☐ 12%☐ 15%**QUESTION 8**

SHADE ONE BOX

Anne drew this shape.

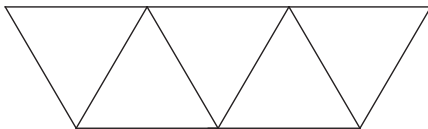


This shape is rotated clockwise 180° about point P. Which shape below does it now look like?

**QUESTION 9**

SHADE ONE BOX

Sticks are used to make this pattern of triangles.



In this pattern, what is the rule for the number of sticks?

☐ $3 \times \text{number of triangles}$ ☐ $2 \times \text{number of triangles}$ ☐ $3 \times \text{number of triangles} - 1$ ☒ $2 \times \text{number of triangles} + 1$ **QUESTION 10**

SHADE ONE BOX

A rule for q in terms of p is $q = 5 - 2p$. When $p = 6.25$, what is the value of q ?

☒ -7.5☐ -3.25☐ 7.5☐ 9.25**QUESTION 11**

SHADE ONE BOX

Which number is exactly halfway between $2\frac{1}{3}$ and $3\frac{1}{2}$?

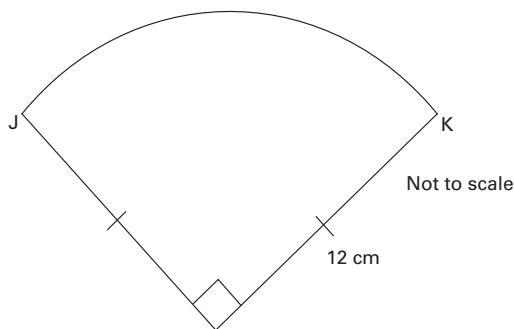
☐ $2\frac{5}{6}$ ☐ $2\frac{2}{5}$ ☒ $2\frac{11}{12}$ ☐ $3\frac{1}{6}$

QUESTION 12

SHADE ONE BOX



A hand-held fan is in the shape of a quadrant. The two straight sides are 12 cm long. The curved length from J to K is to have ribbon attached to it for decoration.



What length is the curved length JK closest to?

☒ 19 cm

☐ 31 cm

☐ 43 cm

☐ 62 cm

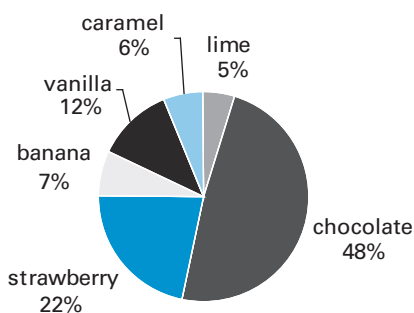
QUESTION 13



WRITE YOUR OWN ANSWER

The pie chart below shows the various milkshake flavours and percentages sold at a café over a one week period in summer.

Milkshakes sold at café



If 250 milkshakes were sold altogether, how many vanilla milkshakes were sold during this particular week?

30

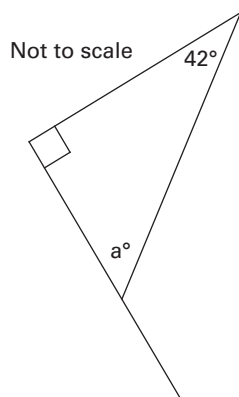
vanilla milkshakes

QUESTION 14

SHADE ONE BOX



What is the size of angle a° ?



☐ 38°

☒ 48°

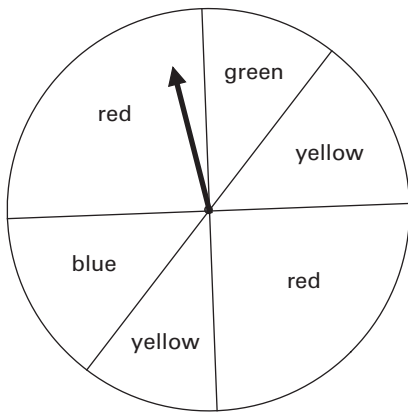
☐ 132°

☐ 142°

QUESTION 15

SHADE ONE BOX

Neve spins this arrow 100 times.



Which table is most likely to represent her results?

☐
☐
☒
☐

Colour	No. of spins
Red	30
Blue	20
Yellow	25
Green	25

Colour	No. of spins
Red	40
Blue	30
Yellow	20
Green	10

Colour	No. of spins
Red	60
Blue	10
Yellow	20
Green	10

Colour	No. of spins
Red	30
Blue	25
Yellow	30
Green	15

QUESTION 16

SHADE ONE BOX

The most popular destinations for Australians to visit overseas in 2008–09 are shown below.

Country	Number of Australians
New Zealand	955 300
United States of America	500 000
Indonesia	436 000
United Kingdom	420 200
Thailand	378 400
China	268 000
Fiji	220 900
Singapore	213 700
Malaysia	205 200
Hong Kong	200 100

How many more people visited the United Kingdom than Singapore and Malaysia combined?

☐ 418 900

☐ 411 700

☐ 8500

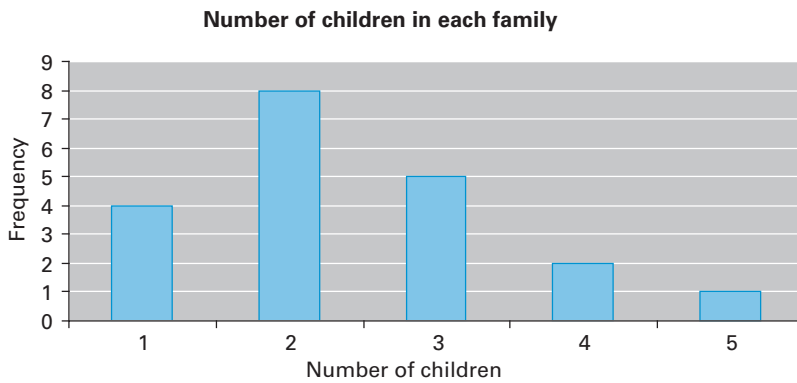
☒ 1300

QUESTION 17

SHADE ONE BOX



This graph shows the number of children in each family for students in a Year 9 mathematics class.



A new student who joins the class has two brothers. Which of the following statements is true?

- ☒ The mean increases and the mode does not change.
- ☐ The mean decreases and the mode does not change.
- ☐ The mode changes and the mean does not change.
- ☐ The mode and the mean both change.

QUESTION 18

WRITE YOUR OWN ANSWER

Alisha works for \$16.55 an hour. If she works for 18 hours in one week, how much will Alisha earn?

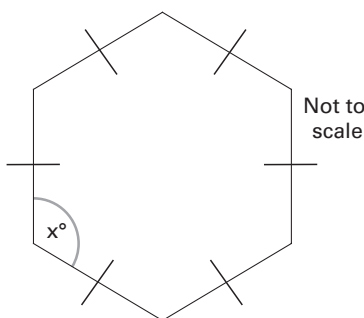
\$297.90

QUESTION 19

SHADE ONE BOX



What is the value of x ?



- ☐ 144° ☒ 120° ☐ 106° ☐ 95°

QUESTION 20

SHADE ONE BOX

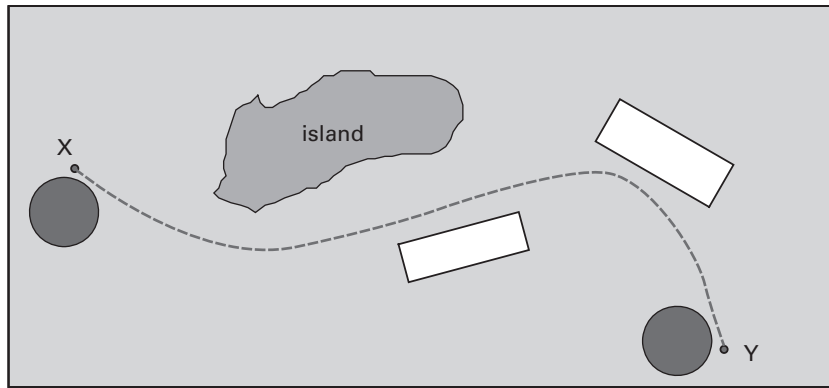


The formula $F = \frac{9}{5}C + 32$ is used to convert degrees Celsius ($^{\circ}\text{C}$) to degrees Fahrenheit ($^{\circ}\text{F}$). When the temperature is 28°C , what is the value of F ?



- ☒ 82.4 ☐ 61.8 ☐ 50 ☐ 47.6

QUESTION 21

SHADE ONE BOX



Key

-  spectator pontoon
-  race officials

Scale: 1 cm represents 10 km

The diagram above shows the layout for a waterskiing race. The distance from X to Y along a river is 12 cm. How long will it take a waterskier to complete the race at a speed of 150 km/h?

- ☐ 12 hours 50 minutes
- ☐ 12 hours 30 minutes
- ☐ 1 hour 15 minutes
- ☒ 48 minutes

QUESTION 22

SHADE ONE BOX

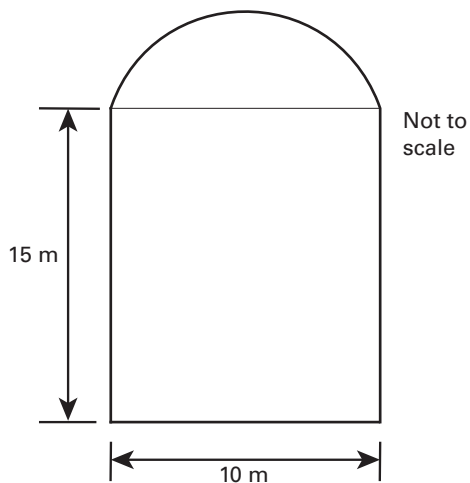
Which one of these points lies on the straight line that includes (3, 11) and (5, 15)?

- ☐ (1, 8)
- ☒ (6, 17)
- ☐ (10, 30)
- ☐ (11, 35)

QUESTION 23

SHADE ONE BOX

A feature wall is constructed in a garden in this shape.



If it is to be painted, what is its area closest to?

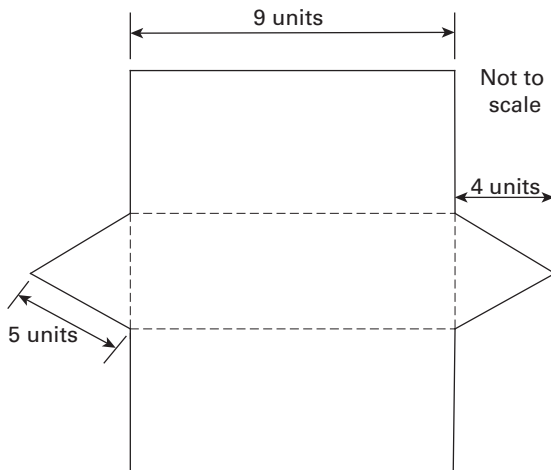
- ☒ 189 m²
- ☐ 229 m²
- ☐ 307 m²
- ☐ 464 m²

QUESTION 24

SHADE ONE BOX



The net of a triangular prism is shown below.



What is the volume of this solid?

☐ 90 cm³☐ 108 cm³☒ 168 cm³☐ 180 cm³**QUESTION 25**

WRITE YOUR OWN ANSWER

Given $a = 6$ and $b = -7$, what is the value of $a(a - b)$?

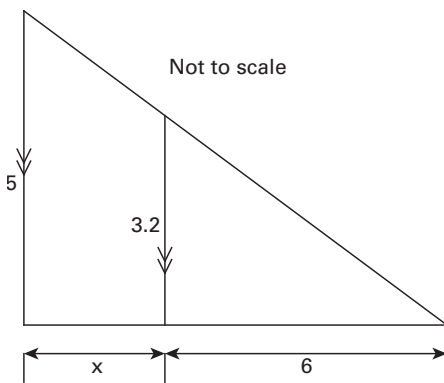
78

QUESTION 26

SHADE ONE BOX

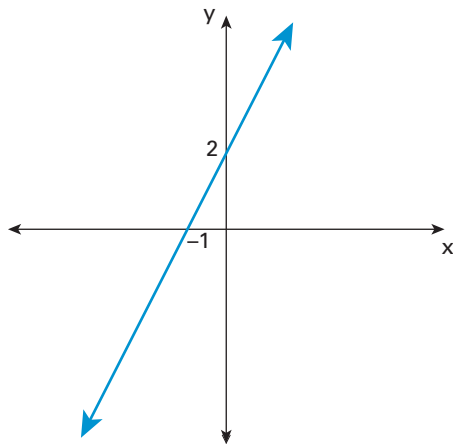


What is the length of x ?

☒ 3.375☐ 9.375☐ 10.8☐ 15.625

QUESTION 27SHADE ONE BOX 

Here is the graph of a linear equation.



If this straight line is extended at both ends, which one of the following points will lie on this line?

☐ $(-3, -8)$ ☒ $(-7, -12)$ ☐ $(5, 11)$ ☐ $(12, 27)$ **QUESTION 28**SHADE ONE BOX 

$$y = 2x + 3$$

$$y = 5x - 9$$

Which value of x is the solution to both equations?

☒ $x = 4$ ☐ $x = 2$ ☐ $x = -2$ ☐ $x = -4$ **QUESTION 29****WRITE YOUR OWN ANSWER**

One Australian dollar buys 0.52 British pounds. Using this exchange rate, how many Australian dollars can be bought with 650 British pounds?

\$

QUESTION 30**WRITE YOUR OWN ANSWER**

Red, blue and white discs are placed in a box in the ratio 2:5:3 respectively. There are 40 discs in the box. If 4 red discs and 6 white discs are added to the box, what fraction of the discs in the box is now white?

QUESTION 31**WRITE YOUR OWN ANSWER**

After nine games, Patrick's average (mean) number of points scored per game was 12. After another seven games, his average had increased to 16. What was his average number of points scored per game overall?

points scored per game

QUESTION 32**WRITE YOUR OWN ANSWER**

An airline is offering a special deal of buy one full-price ticket for \$1350 and pay 70 per cent for the second ticket. Children's tickets cost half the full-price ticket. How much would it cost a family of two adults and three children to travel with this airline?

\$