



Year 9 Numeracy

Non-calculator

Full-length Test 9

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 NOT permitted to bring a calculator into the test room.

Student name:

QUESTION 1

SHADE ONE BOX



Stacey is making this pattern from straws.



Shape 1



Shape 2



Shape 3



Shape 4

The table below shows the number of straws in each shape.

Shape	1	2	3	4	5
Number of straws	3	6	9	12	?

How many straws does Stacey need for Shape 5?

☐ 14

☒ 15

☐ 16

☐ 20

QUESTION 2

SHADE ONE BOX



Which of the following sets of numbers is arranged in order from smallest to largest?

☐ 0.1101, 0.111, 0.11

☐ 0.1101, 0.11, 0.111

☒ 0.11, 0.1101, 0.111

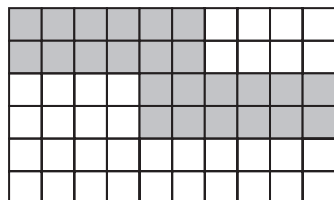
☐ 0.11, 0.111, 0.1101

QUESTION 3

SHADE ONE BOX



What percentage of the diagram is shaded?



☐ 60%

☒ 40%

☐ 24%

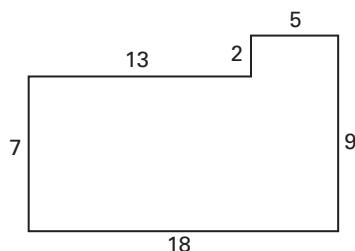
☐ 36%

QUESTION 4

WRITE YOUR OWN ANSWER



Write the perimeter of the shape below in the box. All measurements are in centimetres.



54

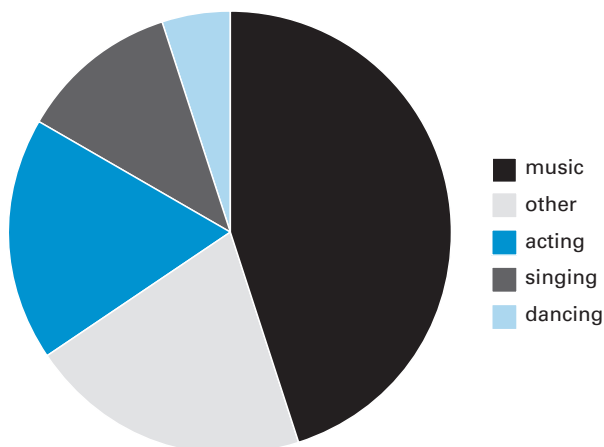
cm

QUESTION 5

SHADE ONE BOX

The pie chart below shows a sample of 500 Year 9 students' favourite artistic activities.

Favourite artistic activities



Which of the following conclusions can be drawn from the graph?

- ☐ More than one-fifth of the sample preferred dancing.
- ☐ More than one-quarter of the students surveyed preferred acting.
- ☐ Less than one-tenth of the students preferred singing.
- ☒ Less than half the students preferred music.

QUESTION 6



WRITE YOUR OWN ANSWER

What is the area of a triangle with base length 10 m and height 6 m?

30 cm²

QUESTION 7



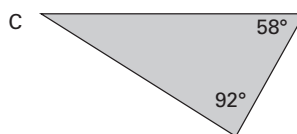
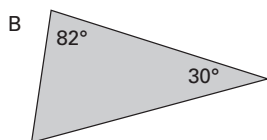
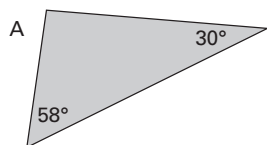
WRITE YOUR OWN ANSWER

Sam the concreter mixes one part cement to two parts water to three parts gravel to make his concrete. He uses 6 kg of cement for this job. How much gravel does he need?

18 kg

QUESTION 8

SHADE ONE BOX



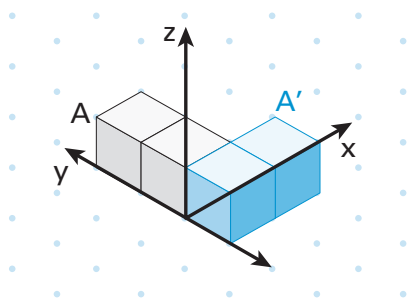
Which of the above triangles are similar?

- ☐ B and C ☐ A and B ☐ All three ☒ A and C

QUESTION 15

SHADE ONE BOX

Which of the following describes the transformation needed to move the black object to the position of the blue object?



- ☒ 90° clockwise about the z-axis
- ☐ 90° anticlockwise about the x-axis
- ☐ 90° anticlockwise about the z-axis
- ☐ 90° about the line $y = x$

QUESTION 16



WRITE YOUR OWN ANSWER

If 3 is added to x and the result doubled, the answer is 16.
What is the value of x ?

5

QUESTION 17

SHADE ONE BOX

Beryl has 24 green buttons and 48 red buttons. What fraction of the buttons is red?

- ☐ $\frac{1}{2}$ ☐ $\frac{1}{3}$ ☐ $\frac{3}{4}$ ☒ $\frac{2}{3}$

QUESTION 18

SHADE ONE BOX

The product of y and $y - 7$ can be written as?

- ☐ $y + (y - 7)$ ☒ $y(y - 7)$ ☐ $y^2 - 7$ ☐ $7y$

QUESTION 19

SHADE ONE BOX

At 12 noon EST in Sydney, the times in some other international cities are as follows:

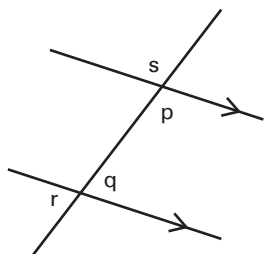
London 2:00 a.m.	Oslo 3:00 a.m.
Tokyo 11:00 a.m.	Cape Town 4:00 a.m.
Beijing 10:00 a.m.	Rangoon 8:30 a.m.
Mumbai 7:30 a.m.	Istanbul 4:00 a.m.

In which city is it 3.00 a.m. if it is 5.00 a.m. in Sydney?

- ☐ London
- ☐ Tokyo
- ☒ Beijing
- ☐ Cape Town

QUESTION 20SHADE ONE BOX 

In the diagram below, which of the angles are equal to 63° ?

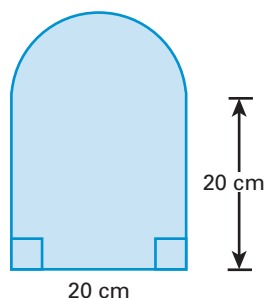

☐ p and s

☐ p and q

☒ q and r

☐ s and q
QUESTION 21
 **WRITE YOUR OWN ANSWER**

What is the area of the figure below? Write your answer to the nearest whole number.


 cm^2
QUESTION 22SHADE ONE BOX 

A bag contains three red, two yellow, one green and four blue marbles. What is the probability of picking a red marble at random?

☐ 3

☐ $\frac{3}{7}$
☐ 0.7

☒ 0.3
QUESTION 23SHADE ONE BOX 

Shade the box that shows 5.03 correct to 2 significant figures.

☒ 5.0

☐ 5.03

☐ 5.1

☐ 5
QUESTION 24SHADE ONE BOX 

Below is a set of 8 scores:

3, 5, 5, 10, 10, 13, 13, 50

What will change if score 50 is removed?

☐ mean only

☐ mean and median

☐ mean and mode

☒ mean and range

QUESTION 25**WRITE YOUR OWN ANSWER**

Two numbers added together equal -1. The same two numbers multiplied together equal -72.

What are the two numbers?

-9

and

8

QUESTION 26**WRITE YOUR OWN ANSWER**

At the Boxing Day sales, a TV was advertised for \$600, which was 40 per cent off the original price. What was the original price?

\$ 1000

QUESTION 27**WRITE YOUR OWN ANSWER**

The sum of the ages of Sara and Tomo is 20, the sum of the ages of Sara and Ubi is 16, and the sum of the ages of Tomo and Ubi is 12. Find Ubi's age.

4

years old

QUESTION 28**SHADE ONE BOX**

Which of the following is the table of values for $y = 6 - 2x^2$?

☐

x	-2	-1	0	1	2
y	10	8	6	4	2

☐

x	-2	-1	0	1	2
y	2	-4	-6	-4	2

☒

x	-2	-1	0	1	2
y	-2	4	6	4	-2

☐

x	-2	-1	0	1	2
y	14	8	6	8	14

QUESTION 29**SHADE ONE BOX**

Which number has the greatest value?

☒ $\frac{1}{3}$ ☐ $\sqrt{0.09}$ ☐

0.31

☐ $(0.3)^2$ **QUESTION 30****SHADE ONE BOX**

Which of the following are the Pythagorean triads?

a (3, 4, 5)

b (5, 10, 15)

c (7, 24, 25)

☐

a only

☒

a and c

☐

b and c

☐

all three

QUESTION 31

SHADE ONE BOX



A class is asked to suggest a way of randomly surveying people to find out their opinions about a general question. The suggestions are:

- a everyone at a school has their name on a ticket. The tickets are put in a barrel and three are drawn out to be school representatives.
- b people from the Adelaide White Pages phone directory are phoned at random in a survey.
- c a survey of medium-sized Australian businesses is conducted by choosing every 200th business from GST-registered businesses.

The random methods are:



all three



a and b



b and c



a and c

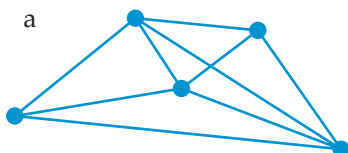
QUESTION 32

SHADE ONE BOX

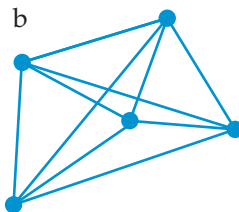


Three diagrams of circuit designs are shown below.

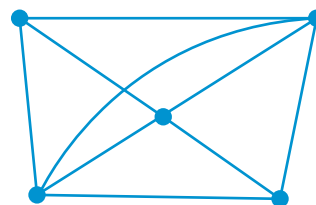
a



b



c



Which design(s) can be redrawn without wires crossing?



none



all



a and c



b and c