



MINISTERIAL COUNCIL ON EDUCATION,
EMPLOYMENT, TRAINING AND YOUTH AFFAIRS

NATIONAL ASSESSMENT PROGRAM
LITERACY AND NUMERACY

NUMERACY NON-CALCULATOR



YEAR

9
2009

0:40

SESSION 2

Time available for students
to complete test: 40 minutes

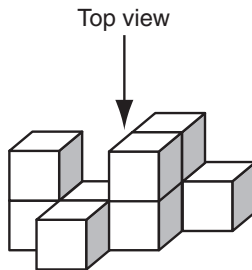
Use 2B or HB
pencil only



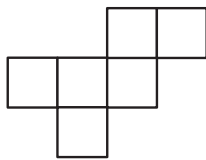
YEAR 9 NUMERACY

- 1** The object below is made from 9 cubes.

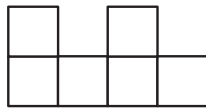
Shade one bubble.



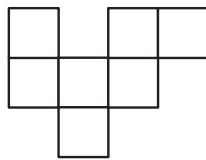
Which one of these shows the top view?



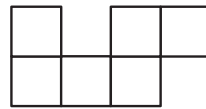
☐



☐



☐



☐

- 2** The probability of rolling a 3 on a standard six-sided die is

$$\frac{1}{2}$$

☐

$$\frac{1}{3}$$

☐

$$\frac{1}{6}$$

☐

$$\frac{3}{4}$$

☐

- 3** This pole measures the depth of water in a river.

Approximately how deep is the river?

15centimetres

☐

1.05metres

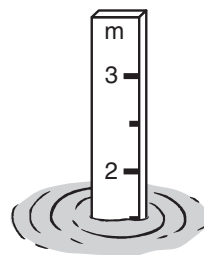
☐

1.5metres

☐

15metres

☐



YEAR 9 NUMERACY

- 4** Steven cuts his birthday cake into 8 equal slices.
He eats 25% of the cake in whole slices.

Write your answer
in the box.



How many slices of cake are left?

- 5** A number is multiplied by itself and then 9 is added.
The answer is 13.

What is the number?

- 6** The area of this shaded rectangle is 98 cm^2 .



7 cm (not to scale)

?

What is the length of the shaded rectangle?

cm

- 7** Which is the best estimate for $16 \times 34 + 68 - 91$?

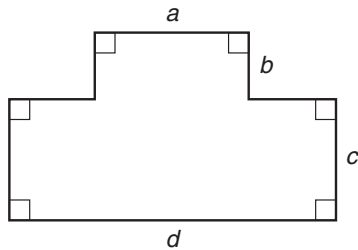
Shade one
bubble.



- ☐ $10 \times 30 + 60 - 90$
- ☐ $10 \times 30 + 70 - 90$
- ☐ $20 \times 30 + 70 - 90$
- ☐ $20 \times 40 + 70 - 100$

YEAR 9 NUMERACY

- 8** Elly drew this floor plan of her school building.



Shade one bubble.



Which expression gives the floor area of Elly's school building?

$(a \times b) + (c \times d)$

☐

$(a \times b) \times (c \times d)$

☐

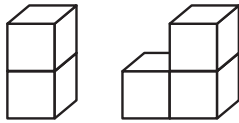
$(a + b) + (c + d)$

☐

$(a + b) \times (c + d)$

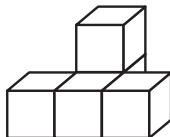
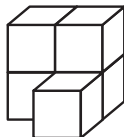
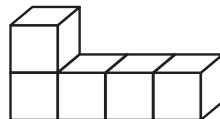
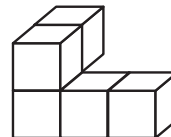
☐

- 9** Kevin made these 2 objects by gluing cubes together face-to-face.



He then joined the 2 objects together.

Which object below could **not** be made using Kevin's 2 objects?


☐

☐

☐

☐

- 10** A tin contains 15 green, 10 red, 7 black and 18 white jelly beans. Without looking, Jen takes one jelly bean from the tin.

What is the chance that the jelly bean is red?

$\frac{1}{2}$

☐

$\frac{1}{3}$

☐

$\frac{1}{4}$

☐

$\frac{1}{5}$

☐

YEAR 9 NUMERACY

11 $\sqrt{200}$ is between

10 and 12

☐

12 and 14

☐

14 and 20

☐

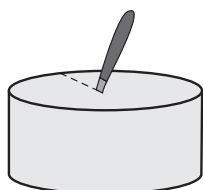
50 and 150

☐

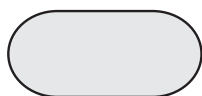
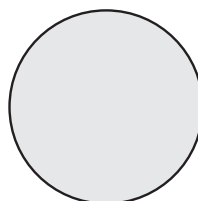
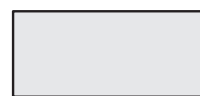
Shade one bubble.



12 A vertical cut is made with a knife all the way through the centre of a cylindrical cheese, as shown.



Which shows the shape of the cross-section made by the cut?

☐☐☐☐

13 Which expression is equivalent to $2 - 3t$?

$3 - 2t$

☐

$3t - 2$

☐

$-2 + 3t$

☐

$-3t + 2$

☐

YEAR 9 NUMERACY

- 14** Helen has 24 red apples and 12 green apples.

What fraction of the apples are green?

Shade one bubble.



$$\frac{1}{2}$$

☐

$$\frac{1}{3}$$

☐

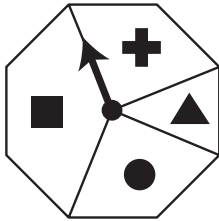
$$\frac{1}{4}$$

☐

$$\frac{1}{12}$$

☐

- 15** Voula spins the arrow 100 times.



Which table is **most** likely to show her results?

Shape section	Number of spins
+	15
▲	10
●	15
■	60

☐

Shape section	Number of spins
+	10
▲	25
●	25
■	40

☐

Shape section	Number of spins
+	25
▲	10
●	25
■	40

☐

Shape section	Number of spins
+	25
▲	25
●	25
■	25

☐

- 16** Which expression is equal to $5^3 \times 25^2$?

- ☐ $5 \times 3 \times 25 \times 2$
☐ $5 \times 5 \times 5 \times 5 \times 5$
☐ $5 \times 5 \times 5 \times 25 \times 5$
☐ $5 \times 5 \times 5 \times 5 \times 5 \times 5 \times 5$

YEAR 9 NUMERACY

17

A copier prints 1200 leaflets.

One-third of the leaflets are on yellow paper and the rest are on blue paper.

There are smudges on 5% of the blue leaflets.

How many blue leaflets have smudges?

Shade one bubble.



40

☐

60

☐

400

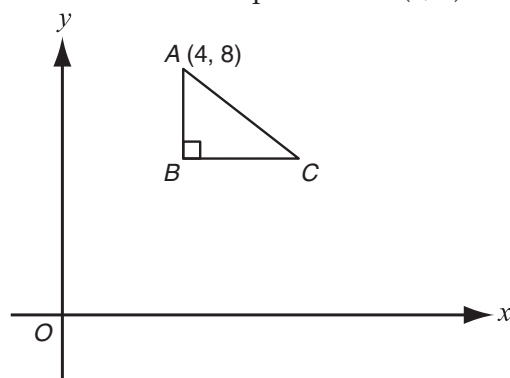
☐

800

☐

18

The coordinates of point A are $(4, 8)$.



AB is parallel to the y axis.

If $AB = 3$, $BC = 4$ and $AC = 5$, what are the coordinates of point C ?

$(8, 5)$

☐

$(5, 8)$

☐

$(1, 8)$

☐

$(8, 1)$

☐

19

Here is a set of 8 scores.

2, 4, 4, 9, 9, 12, 12, 60

What will change if score 60 is removed from the set?

- ☐ mean only
- ☐ mean and median
- ☐ mean and mode
- ☐ mean and range

YEAR 9 NUMERACY

- 20** Two numbers added together equal 1.
The two numbers multiplied together equal -30 .

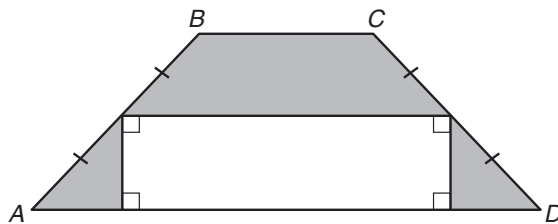
Write your answers
in the boxes.

What are the two numbers?

and

- 21** The area of the rectangle in this diagram below is 10 cm^2 .

Write your answer
in the box.



What is the area of the trapezium $ABCD$?

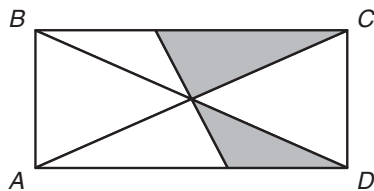
 cm^2

- 22** When $m = 2$ and $n = -2$, what is the value of $m^2 + n^2$?

$$m^2 + n^2 = \text{ }$$

- 23** $ABCD$ is a rectangle.

A line is drawn through the point where the two diagonals intersect.
Two triangles are then shaded.



What fraction of the rectangle is shaded?

YEAR 9 NUMERACY

- 24** The diameter of Jupiter is approximately
3 times the diameter of Neptune,
12 times the diameter of Venus and
21 times the diameter of Mars.

Shade one
bubble.



About how many times larger is the diameter of Neptune than the diameter of Mars?

7

☐

18

☐

24

☐

63

☐

- 25** The petrol tank in Gina's car is empty.
She buys \$72 worth of petrol at \$1.50 per litre.
Her car uses 8 litres of petrol per 100 km travelled.

Which calculation gives the number of kilometres travelled before
the tank is empty again?

☐ $72 \div 1.50 \times 8 \div 100$

☐ $72 \div 1.50 \div 8 \times 100$

☐ $72 \times 1.50 \div 8 \div 100$

☐ $72 \times 1.50 \times 8 \times 100$

- 26** Which of these points lies on the straight line joining the points (4, 4) and (20, 12)?

(5, 5)

☐

(6, 6)

☐

(10, 7)

☐

(14, 8)

☐

YEAR 9 NUMERACY

- 27** A ticket costs \$75.
A fee of 10% is added to the price.

Shade one bubble.



Which calculation will give the new price?

$75 + 10$

☐

$75 + 0.1$

☐

75×0.1

☐

75×1.1

☐

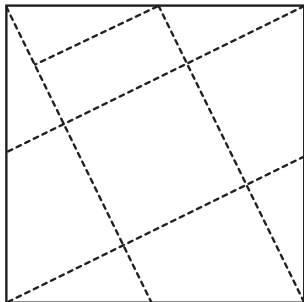
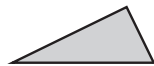
- 28** A coin is tossed 3 times. There are 8 possible outcomes.

Write your answer in the box.



What is the probability of getting 2 tails and 1 head in any order?

- 29** The entire top of a square table is tiled with triangular tiles like this one.



Altogether, how many triangular tiles are used?

YEAR 9 NUMERACY

30 $2(2x - 3) + 2 + ? = 7x - 4$

What term makes this equation true for all values of x ?

Write your answer
in the box.



31 Which number has the **largest** value?

$$\frac{1}{6}$$

☐

$$\sqrt{0.04}$$

☐

$$0.18$$

☐

$$(0.4)^2$$

☐

Shade one
bubble.



END OF TEST