Year 9 NUMERACY
Non-calculator

Test 3

INSTRUCTIONS TO STUDENTS

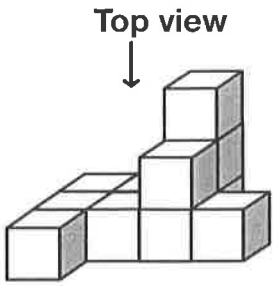
Use a 2B pencil to show your answers.

For the multiple-choice questions, show your answer by shading the matching bubble. If you make a mistake, erase the shading and shade the correct bubble.

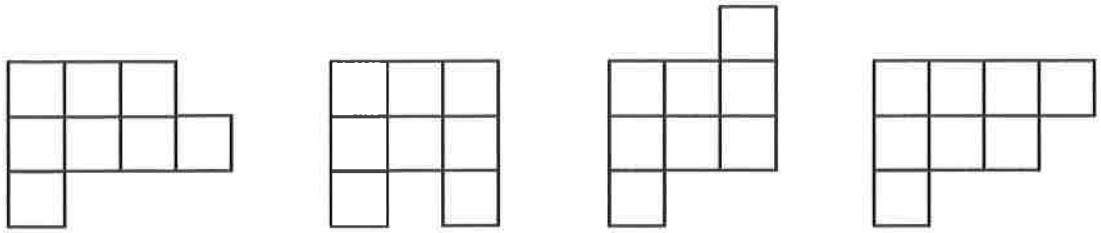
For the other questions, write your answer in the box provided. If you make a mistake, erase it and write the correct answer.

1 The object below is formed using 11 cubes.

Shade one bubble.



Which one of these shows the top view of the object?



○ ○ ○ ○

2 A spinner is marked with equal sections numbered from 1 to 8.

The spinner is spun once.

What is the chance that the spinner lands on a 2?

$\frac{1}{8}$ ○ $\frac{1}{4}$ ○ $\frac{1}{2}$ ○ 1 ○

3 What speed is shown on the speedometer?

108 kph ○ 115 kph ○ 118 kph ○ 128 kph ○

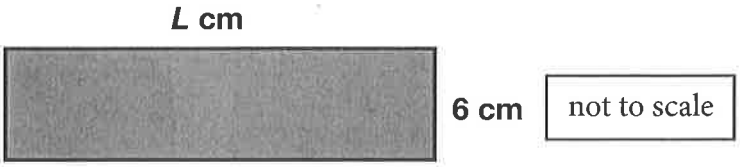
4 Jill had $50 to spend.
She spent 20% of her money buying a book.
How much did Jill have left after she bought the book?

$ ☐

5 A number is multiplied by itself and then 6 is subtracted.
The answer is 30.
What is the number?

☐

6 The perimeter of the rectangle is 36 cm.



What is the value of L?

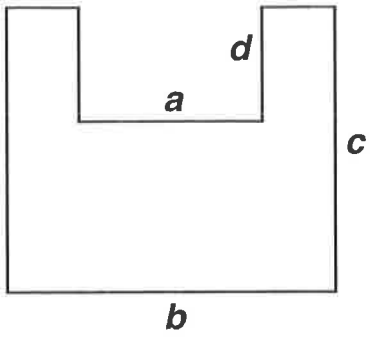
☐

7 Which of these is the best estimate for $13 \times 28 + 12 - 88$?

- ○ $10 \times 30 + 10 - 90$
- ○ $10 \times 20 + 10 - 80$
- ○ $20 \times 30 + 20 - 90$
- ○ $20 \times 30 + 10 - 80$

8 A piece of a puzzle is shown in the diagram.

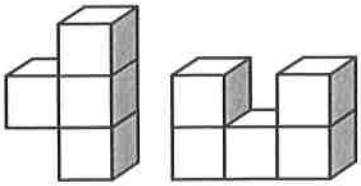
Which expression gives the area of the piece?



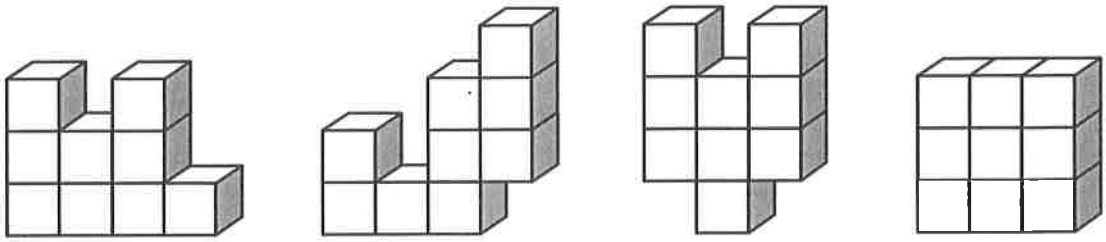
Shade one bubble.

- ○ $b \times c + a \times d$
- ○ $b \times c - a \times d$
- ○ $2b + 2c$
- ○ $a + b + c + d$

9 Sam made these two objects by gluing cubes together.



Which object below could **not** be made by joining Sam's two objects?



○ ○ ○ ○

10 A bag contains 12 red, 3 green and 5 blue balls.

Without looking, Suri takes a ball from the bag.

What is the chance that the ball is blue?

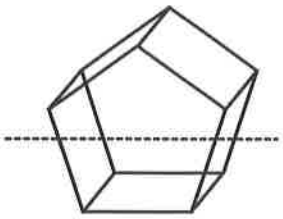
$\frac{1}{5}$	$\frac{1}{4}$	$\frac{1}{3}$	$\frac{1}{2}$
○	○	○	○

11 $\sqrt{150}$ is between:

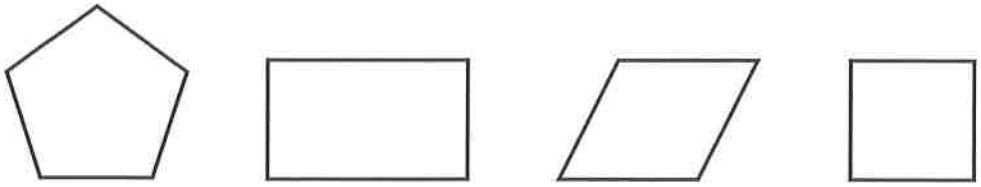
Shade one bubble.

10 and 12	12 and 14	14 and 16	50 and 100
○	○	○	○

12 A horizontal slice is made right through the prism shown.



Which of these shows the shape of the cross-section made by the slice?



○ ○ ○ ○

13 Which expression is equivalent to $4p - 6pt$?

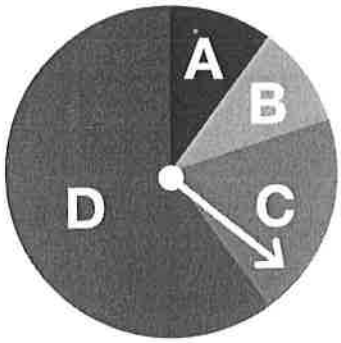
- ○ $6pt - 4t$
- ○ $-6pt + 4p$
- ○ $6p - 4pt$
- ○ $-4p + 6pt$

14 There are 12 novels and 6 magazines on a shelf.

What fraction of the items on the shelf are novels?

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

15 Ben spins the arrow 200 times.



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

Sector	Number of spins
A	40
B	40
C	80
D	40

○

Sector	Number of spins
A	40
B	40
C	40
D	80

○

Sector	Number of spins
A	20
B	20
C	40
D	120

○

Sector	Number of spins
A	50
B	50
C	50
D	50

○

16 Which expression is equivalent to $9^2 \times 3^3$?

○ $3 \times 3 \times 3 \times 3 \times 3 \times 3 \times 3$

○ $9 \times 9 \times 3 \times 3$

○ $9 \times 2 \times 3 \times 3$

○ $9 + 9 + 3 + 3 + 3$

17 A team scored 30 points.

The table shows the number of points scored by 4 of the 5 players.

Player	Anne	Bev	Chris	Diane	Emmy
Points	6	10	4	4	?

What percentage of the points were scored by Emmy?

Shade one bubble.

6% ○ 20% ○ 24% ○ 80% ○

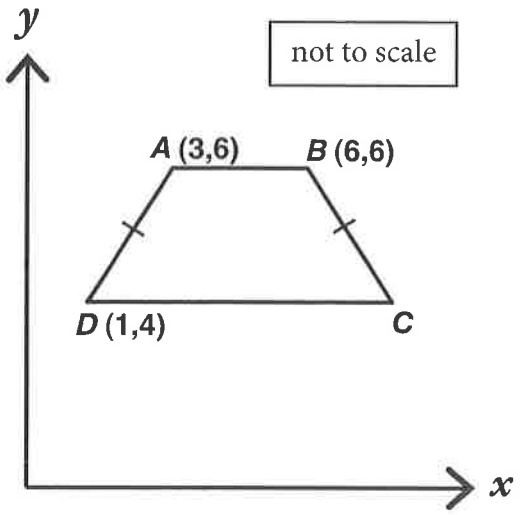
18 *ABCD* is a trapezium.

AB is parallel to *CD*.

AD and *BC* are equal in length.

What are the coordinates of *C*?

(,)



Write your answer in the box.

19 The number of errors on 10 pages of an assignment were:

1 3 4 4 7 8 8 8 9 40

What will change if the 40 is removed from the set?

Shade one bubble.

- ○ the mean only
- ○ the mean and median
- ○ the mode only
- ○ the mean, median and mode

20 Two numbers added together equal 5.

The two numbers multiplied together equal −14.

What are the two numbers?

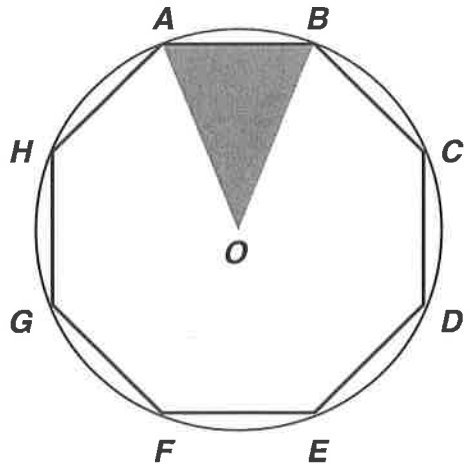
Write your answer in the box.

☐ and ☐

21 The octagon *ABCDEFGH* has all sides of equal length.

O is the centre of the circle around the octagon.

The area of the shaded triangle is 20 cm².



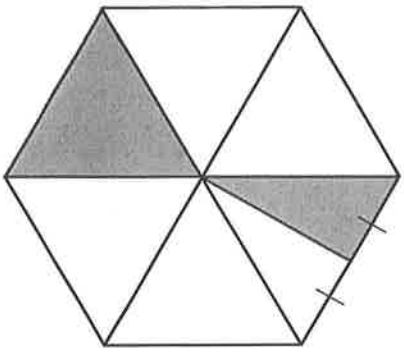
What is the area of the octagon *ABCDEFGH*?

☐ cm²

22 When $a = 6$ and $b = -3$, what is the value of $a^2 + ab$?

☐

23 What fraction of the hexagon is **not** shaded?



Write your answer in the box.

24 Jill has \$5 more than Pam.
Sue has \$6 less than twice the amount Jill has.
If Pam has \$22, how much does Sue have?

Shade one bubble.

\$21	\$42	\$48	\$54
○	○	○	○

25 A repair company charges a fixed fee of \$50 plus \$40 per half hour in labour costs.

A repair takes $1\frac{1}{2}$ hours.

Which calculation gives the total cost?

- ○ $(50 + 40) \times 1.5$
- ○ $50 + 40 \times 1.5$
- ○ $50 + 40 \times 3$
- ○ $(50 + 40) \times 3$

26 Which of the following points lies on the straight line joining the points (2,2) and (6,10)?

(3,5) ○ (4,7) ○ (5,9) ○ (7,12) ○

27 Last week the price of a kilogram of bananas was $2.50.

The price has increased by 10% this week.

What is the price this week?

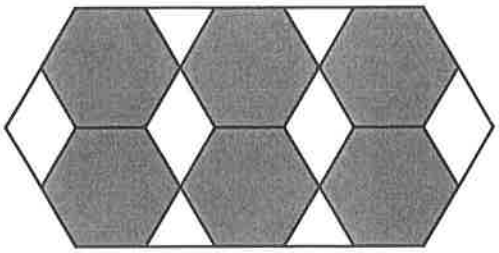
$0.25 ○ $2.25 ○ $2.75 ○ $25 ○

28 A coin is tossed 3 times.

There are 8 possible outcomes.

What is the chance of getting at least one tail?

29 A mat is in the shape of a hexagon.



Write your answer in the box.

Part of the mat is covered with small regular hexagonal tiles.

The remainder is to be covered with triangular tiles like this one: 

How many triangular tiles will be needed?

30 $3(a+5) - 2a + ? = a + 12$

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

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

Shade one bubble.

$\left(\frac{2}{5}\right)^2$ ○ 0.5×0.4 ○ $(0.5)^2$ ○ $\frac{8}{20}$ ○