

Year 9 NUMERACY

Non-calculator

Test 2

INSTRUCTIONS TO STUDENTS



Use a 2B pencil to show your answers.

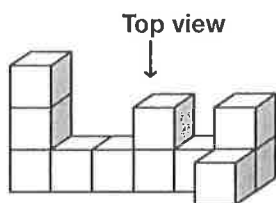


For the multiple-choice questions, show your answer by shading the matching bubble. If you make a mistake, erase the shading and shade the correct bubble.

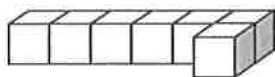


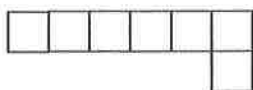
For the other questions, write your answer in the box provided. If you make a mistake, erase it and write the correct answer.

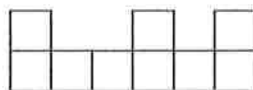
1 The object below is made from 11 cubes.

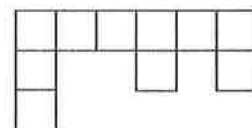


Which one of these shows the top view of the object?









2 A 6-sided die is rolled once.

What is the chance that a number greater than 4 is obtained?

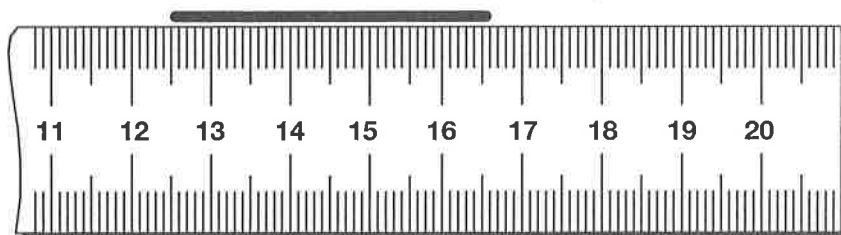
$$\frac{1}{6}$$

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

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

$$\frac{2}{3}$$

3 This ruler was used to measure the length of the line in centimetres.



Approximately how long is the line?

2.1 cm

3.1 cm

4.1 cm

4.6 cm

- 4 There were 150 pictures for sale in an art show.
20% of the pictures were sold during the show.
How many pictures were sold?



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

- 6 The area of the shaded rectangle is 72 cm^2 .



What is the length of the shaded rectangle?

 cm

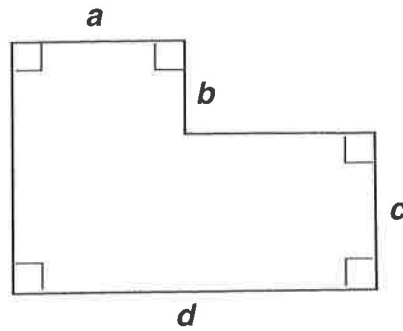
- 7 Which of the following is the best estimate for $14 \times 37 + 69 - 36 \div 9$?

- $10 \times 40 + 70 - 40 \div 10$
- $20 \times 40 + 70 - 30 \div 10$
- $10 \times 40 + 60 - 30 \div 10$
- $10 \times 40 + 60 - 40 \div 10$

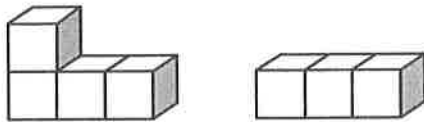


8 The area of the shape shown is given by which expression?

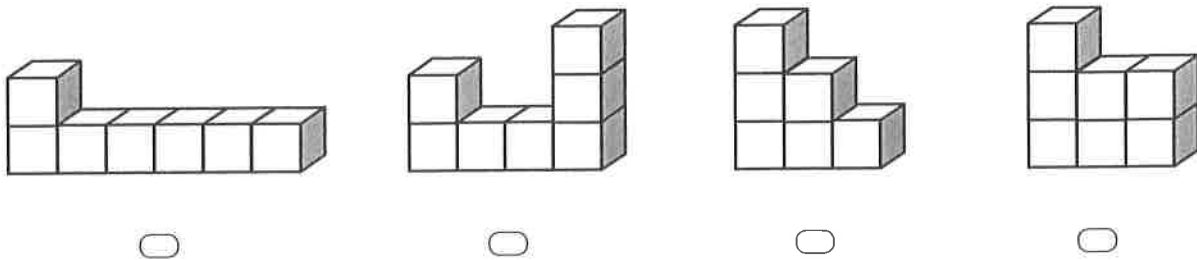
- $a \times b + c \times d$
- $a \times d + b \times c$
- $2d + 2(b + c)$
- $a + b + c + d$



9 Alex made these two objects by gluing cubes together.



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



10 A choir contains 6 girls and 4 boys.

Their names are put into a hat and one is chosen, without looking, to be the conductor.

What is the chance that the conductor is a girl?



11 $\sqrt{500}$ is between:

15 and 20

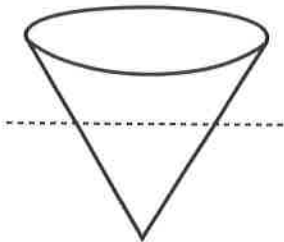
20 and 25

25 and 30

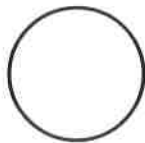
100 and 400



12 A horizontal slice is made right through a cone as shown.



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









13 Which expression is equivalent to $4 - 5m$?

$5 - 4m$

$-5m + 4$

$-4 + 5m$

$5m - 4$

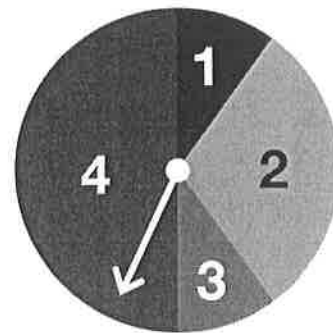
14 The labels on 24 of the 40 tins of tomatoes on a supermarket shelf were damaged.

The fraction of the tins with damaged labels was:



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

15 Theo spins the arrow 100 times.



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

Sector	Number of spins	Sector	Number of spins	Sector	Number of spins	Sector	Number of spins
1	20	1	10	1	20	1	10
2	20	2	30	2	20	2	10
3	20	3	10	3	10	3	20
4	40	4	50	4	50	4	60

-

16 Which expression is equivalent to $2^3 \times 8^2$?

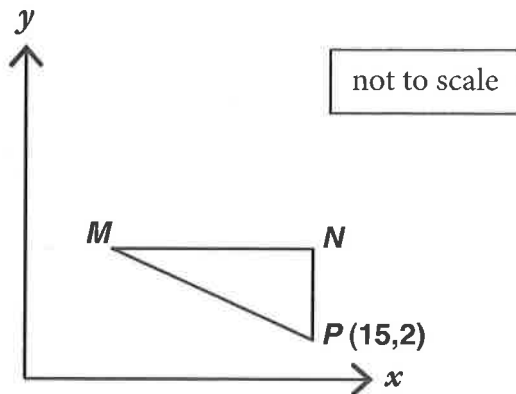
- $2 \times 3 \times 8 \times 2$
 $2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2$
 $2 \times 2 \times 2 \times 8 \times 2$
 $2 \times 3 \times 8 \times 8$

- 17 1500 copies of an advertisement were printed.
 One-fifth of the copies were put into letterboxes.
 10% of the remaining copies were put into a recycling bin.
 How many copies of the advertisement were put into the recycling bin?



- 30 60 120 300
-

- 18 The coordinates of the point P are $(15,2)$.
 PN is parallel to the y axis.
 $PN = 5$, $MN = 12$ and $MP = 13$.



What are the coordinates of the point M ?

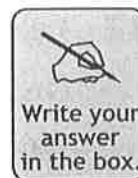
- $(2,7)$ $(3,7)$ $(5,12)$ $(13,7)$
-

- 19 Seven numbers are: 1 2 5 5 5 5 6

Which one of the following statements is true?

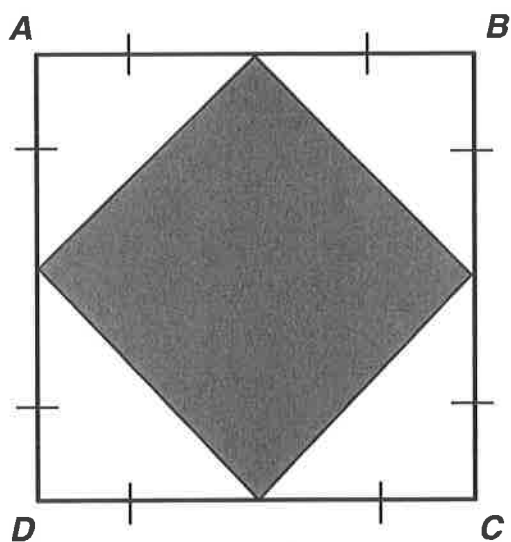
- The mean, median and the mode are equal.
- The mean is greater than the median.
- The median and mode are both 5.
- There is no mode.

- 20 Two numbers added together equal 15.
The larger number divided by the smaller number equals 2.
What are the two numbers?



and

- 21 The area of the shaded square is 26 cm^2 .

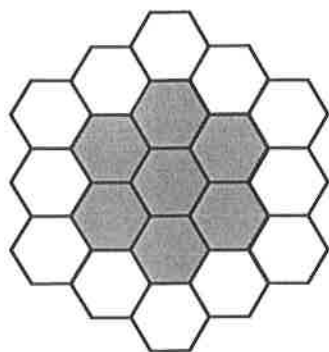


What is the area of the square $ABCD$?

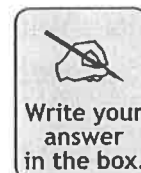
- 22 When $m = 5$ and $n = -4$, what is the value of $m^2 - n^2$?

$m^2 - n^2 =$

23 19 small hexagons are joined to form the shape shown.



What fraction of the area of the shape is shaded?



24 The distance from Here to There is approximately:

- twice the distance from Here to Now
- 10 times the distance from Here to Where.

About how many times the distance from Here to Where is it from Here to Now?

$\frac{1}{10}$

$\frac{1}{5}$

5

10



25 There are 120 L of water in Carmen's water tank.

She has a water-saver showerhead.

Water flows at 9 L per minute.

Carmen showers for 4 minutes.

Which calculation gives the number of litres of water remaining in the tank after Carmen's shower?

$120 + 9 \times 4$

$120 - 9 + 4$

$120 - 9 \times 4$

$(120 - 9) \times 4$

26 Which of the following points does **not** lie on the line with equation $y = 3x - 5$?



$(-2, -11)$

$(0, -5)$

$(2, 1)$

$(3, 6)$

27 The price of a pair of jeans was \$55.
The price was increased by 10%.
Which calculation will give the new price?

55×1.1

55×0.9

$55 - 10$

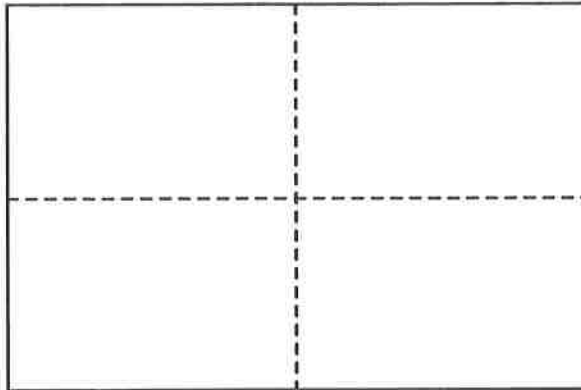
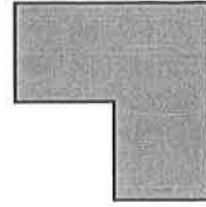
$55 + 10$

28 The grid shows all the possible outcomes when two 6-sided dice are rolled.
Use the grid to find the chance of obtaining a total of 6 when two die are rolled.



Second die	6	•	•	•	•	•	•
	5	•	•	•	•	•	•
	4	•	•	•	•	•	•
	3	•	•	•	•	•	•
	2	•	•	•	•	•	•
	1	•	•	•	•	•	•
		1	2	3	4	5	6
		First die					

29 The entire rectangle below is to be covered with tiles shaped like this one (shown right).



Altogether how many of these tiles will be used?

30 $5(2x - 4) + 6 + ? = 7x - 14$

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

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

$\frac{1}{5}$

$\sqrt{0.04}$

0.25

$(0.4)^2$

