MINISTERIAL COUNCIL ON EDUCATION,
EMPLOYMENT, TRAINING AND YOUTH AFFAIRS

NATIONAL ASSESSMENT PROGRAM
LITERACY AND NUMERACY

NUMERACY
NON-CALCULATOR

YEAR
9
2008

0:40 **SESSION 1**

Time available for students to complete test: 40 minutes

Use 2B or HB pencil **only**

YEAR 9 NUMERACY

1 Jen is making this brick pattern.

Shade one bubble.

Shape 1 Shape 2 Shape 3 Shape 4

This table shows the number of bricks she needs for each shape in her pattern.

Shape	1	2	3	4	5
Number of bricks	1	4	9	16	?

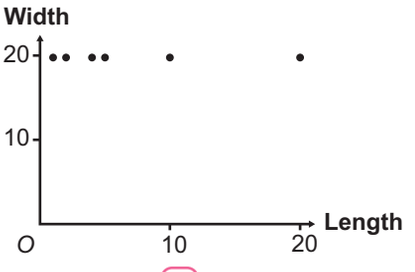
How many bricks are needed for Shape 5?

24 ⬭ 25 ⬭ 29 ⬭ 30 ⬭

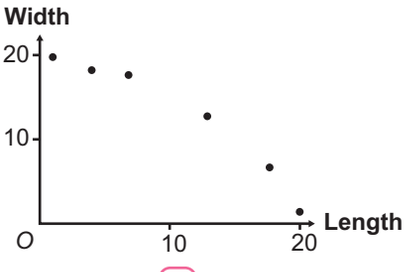
2 The table shows the lengths and widths of rectangles with an area of 20 cm^2.

Length (cm)	1	2	4	5	10	20
Width (cm)	20	10	5	4	2	1

Which graph shows the information in the table for length against width?



⬭



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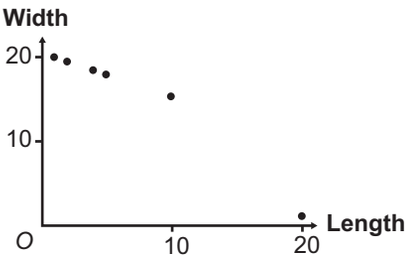

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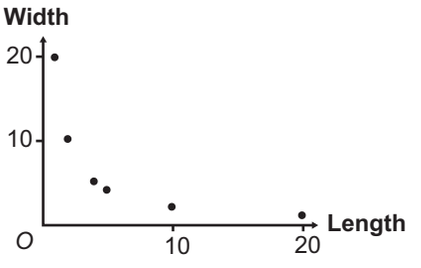
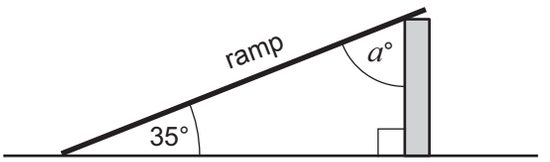


⬭

3 A ramp makes an angle of 35° with the ground.

Shade one bubble.



Not to scale

What is the value of a?

45	55	65	75
○	○	○	○

4 The points Mani scored in his last ten basketball games are:

Write your answer in the box.

9, 11, 12, 12, 18, 20, 21, 22, 22, 30

He put these scores into a stem-and-leaf plot.

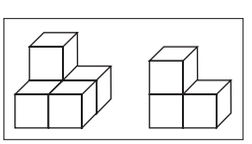
Stem	Leaf
3	0
2	1 2 2
1	1 2 2 8
0	9

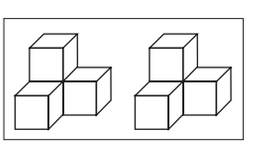
KEY
3 | 0 = 30 points

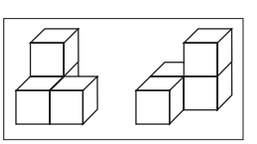
Which score is missing from the plot? ☐

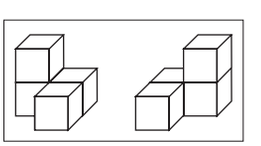
5 Which pair of solid objects **cannot** be joined together to make a cube?

Shade one bubble.


○

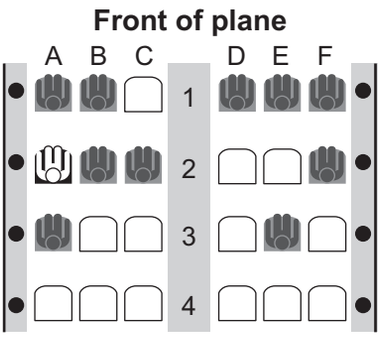

○

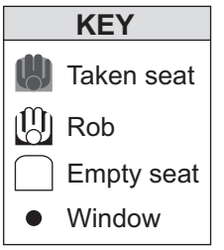

○


○

6 Here is a seating plan for part of an aeroplane.
Rob is sitting in window seat number 2A.

Shade one bubble.





Peta wants to sit in a window seat as close as possible to the front of the plane.

Which empty seat should Peta choose?

1C ○ 2E ○ 3F ○ 4A ○

7 1 Australian dollar buys 0.80 US dollars

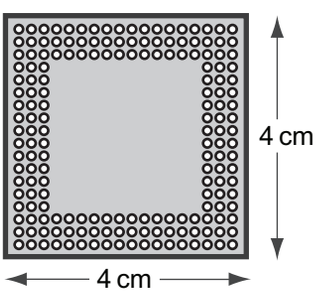
Write your answer in the box.

How many US dollars could be bought with 50 Australian dollars using this exchange rate?

[ ] US dollars

8 A computer chip has dimensions 8 mm × 8 mm.
A scale drawing is shown below.

Shade one bubble.

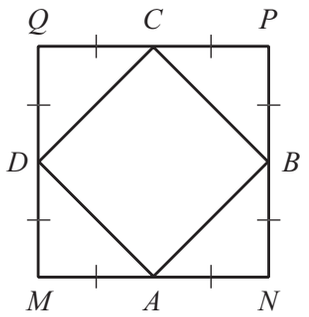


What scale is used in the drawing?

- ○ 1 cm represents 5 mm
- ○ 1 cm represents 2 mm
- ○ 2 cm represents 1 mm
- ○ 5 cm represents 1 mm

9 Two squares *ABCD* and *MNPQ* are shown below.

Shade one bubble.



The area of *ABCD* is

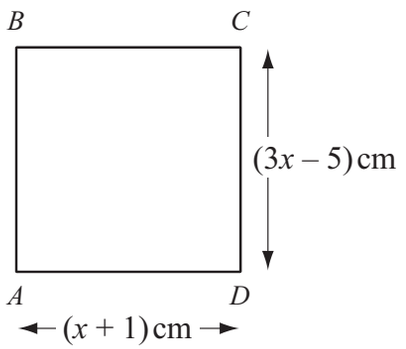
- ⬭ half the area of *MNPQ*.
- ⬭ twice the area of *MNPQ*.
- ⬭ quarter the area of *MNPQ*.
- ⬭ four times the area of *MNPQ*.

10 There are 50 marbles in a bag. Ten marbles are red, the others are black. Emma picks a marble from the bag without looking.

What is the chance of her picking a **red** marble?

1 in 10	2 in 10	4 in 10	5 in 10
⬭	⬭	⬭	⬭

11 *ABCD* is a square.

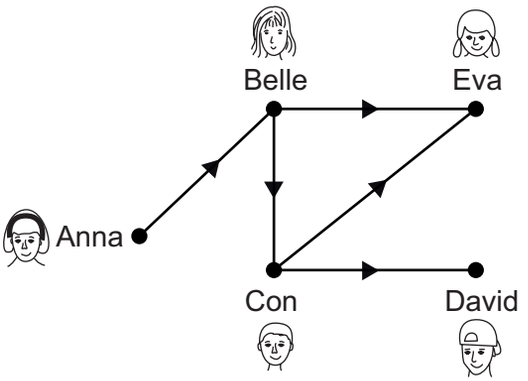


What is the value of x ?

1	2	3	4
⬭	⬭	⬭	⬭

12 Five students compared their heights.
This diagram shows their results.

Shade one bubble.



KEY
→ is taller than

Which student is the tallest?

Anna ⬭ Belle ⬭ Con ⬭ David ⬭ Eva ⬭

13 Which one of the following expressions is equivalent to $2(5m + 1)$?

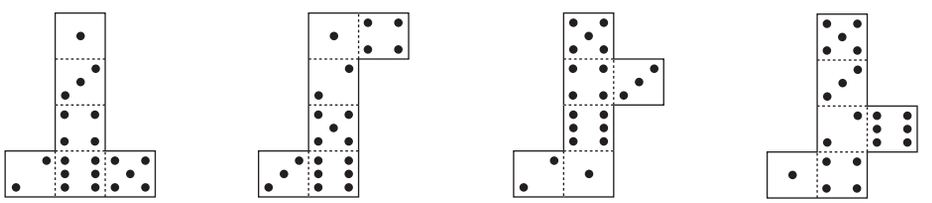
$7m + 1$ ⬭ $10m + 1$ ⬭ $10m + 2$ ⬭ $12m$ ⬭

14 Which fraction has the same value as $2\frac{3}{4}$?

$\frac{8}{4}$ ⬭ $\frac{9}{4}$ ⬭ $\frac{11}{4}$ ⬭ $\frac{14}{4}$ ⬭

15 Here is a standard die.
The sum of the dots on opposite faces is 7.

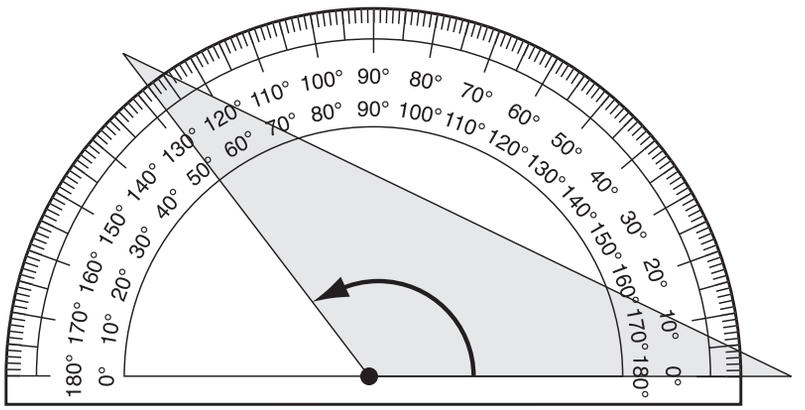
Which is the net of this die?



⬭ ⬭ ⬭ ⬭

16

Write your answer in the box.



What is the size of the angle in the shaded triangle marked by the arrow?

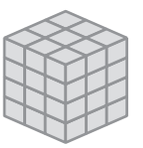
[ ] degrees

17

Shade one bubble.

Mark made this solid object using 36 cubes.

He then painted the complete surface area of the object grey.



The object is then broken apart into 36 cubes.

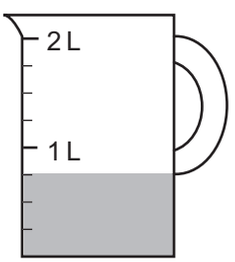
How many cubes have **no** grey faces?

2	4	6	9
○	○	○	○

18

Write your answer in the box.

This jug has some milk in it.



If Eve adds an extra 500 mL of milk to the jug,
how many millilitres (mL) of milk will then be in the jug?

[ ] mL

19 Ann recorded the colour of 50 cars in this table.

Write your answer in the box.

Car colour	Number of cars
White	25
Blue	4
Yellow	5
Red	?
TOTAL	**50**

What percentage of the cars is red? ☐ %

20 Tony drove 300 km in $4\frac{1}{2}$ hours.

His average speed for the first 180 km was 60 km per hour.

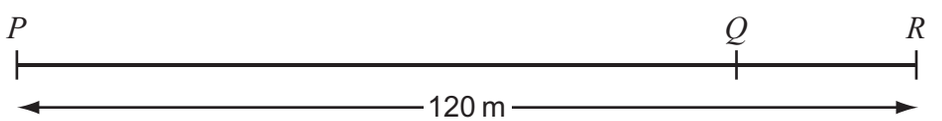
How long did he take to travel the last 120 km? ☐ hours

21 What is the answer to 6.6 ÷ 0.3?

Shade one bubble.

0.022	0.22	2.2	22
⬭	⬭	⬭	⬭

22



The distance from P to Q is four times the distance from Q to R.

The distance from P to R is 120 metres.

What is the distance from Q to R?

15 metres	20 metres	24 metres	30 metres
⬭	⬭	⬭	⬭

23 $5b - 4 = 2b + 17$

What is the value of b in this equation? $b =$ _____

Write your answer in the box.

24 A signal at a pedestrian crossing near Sam's house stays red for 30 seconds. It then changes to green for 20 seconds.

What is the probability that it will be **green** the next time Sam wants to use this crossing?

Shade one bubble.

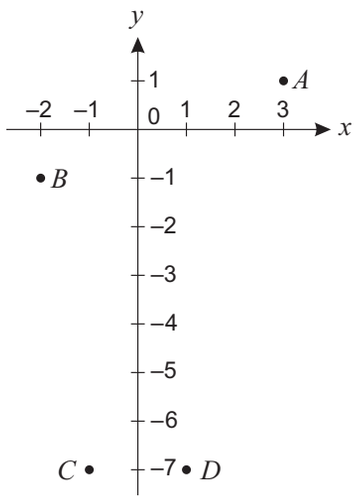
0.2	0.4	0.5	0.6
○	○	○	○

25 In a set of four consecutive whole numbers, the largest number is given the value v.

The smallest number in the set has a value of

$v + 3$	$4 - v$	$v - 4$	$v - 3$
○	○	○	○

26 The graph of $y = 2x - 5$ will be drawn on this grid.



Which two points will the straight line pass through?

A and B	B and C	B and D	A and C
○	○	○	○

27 John has these four number cards.

Shade one bubble.

2^6 6^2 3^4 4^3

Which two cards show numbers with the same value?

- ○ 3^4 and 4^3
- ○ 3^4 and 6^2
- ○ 2^6 and 6^2
- ○ 2^6 and 4^3

28 The value of $7m^2$ when $m = -3$ is

- ○ -63
- ○ -42
- ○ 63
- ○ 441

29 On Monday Tim read 40% of a book.
On Tuesday he read 25% of the remaining pages of the book.

Write your answer in the box.

What percentage of the **whole** book did Tim read on Tuesday? ☐ %

30 The height (h metres) and age (a years) of a tree are related by the following inequality:

Shade one bubble.

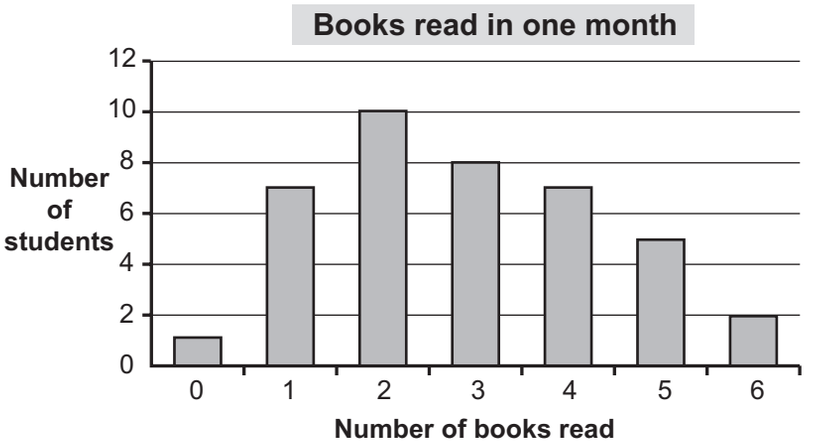
$h < 4a - 3$ for values of a between 1 and 10

Which pair of values satisfy this inequality?

- ○ $h = 2$ and $a = 1$
- ○ $h = 6$ and $a = 2$
- ○ $h = 10$ and $a = 3$
- ○ $h = 20$ and $a = 6$

31 This graph shows the number of books some students at a school read in one month.

Shade one bubble.



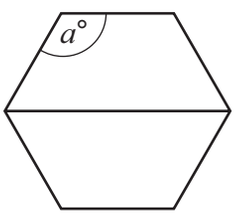
The student who did not read any books now says she read one book.

What effect does this have on the mean and mode of the data?

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

32 Two trapeziums fit together to make this regular hexagon.

Write your answer in the box.



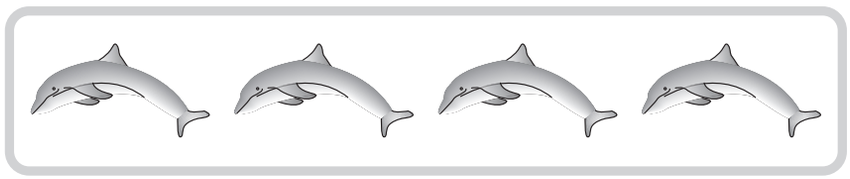
What is the value of a? $a =$ ____

END OF TEST

YEAR 9 NUMERACY PRACTICE QUESTIONS

P1 How many dolphins are shown on this card?

Shade one bubble.

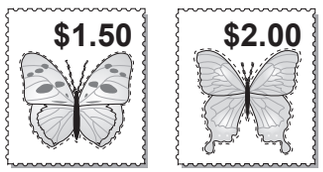


3 ○ 4 ○ 5 ○ 6 ○

P2 **6 + 4 =** ☐

Write your answer in the box.

P3 What is the total cost of these two stamps?



$ ☐