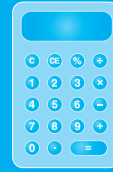


NUMERACY

CALCULATOR ALLOWED



YEAR

9

Example test



SESSION 1

0:40

Time available for students to
complete test: 40 minutes

Use 2B or HB
pencil only





1

What number is missing from this number sentence?

$$5 \times ? + 15 = 85$$

2



10



14



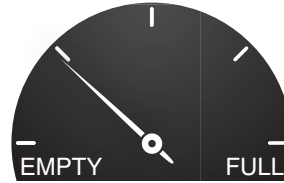
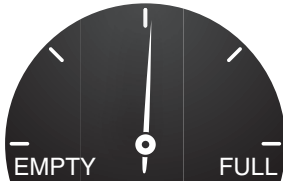
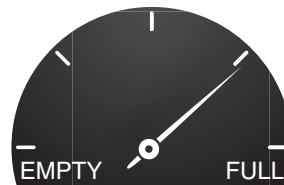
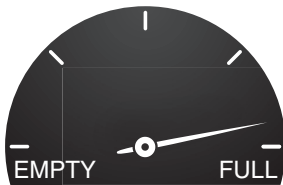
20



2

These pictures show the dials for four fuel tanks.

Which dial shows that the tank is about 75% full?



3

Jane bought a packet of 12 cards for \$15.00.

The average price of a card is

\$0.80



\$1.25



\$1.80

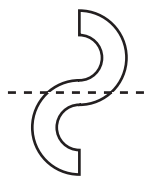
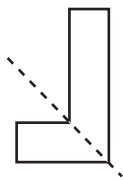


\$3.00



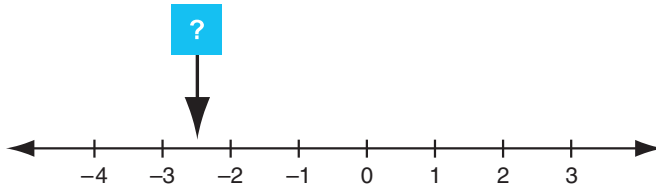
4

Which dotted line is a line of symmetry?





5



The arrow points to a position on the number line.

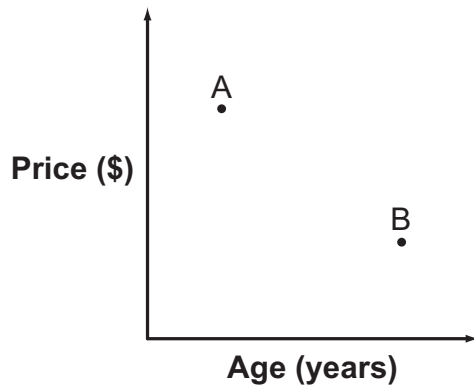
What number is at this position?

6

A shop sells new and used computers.

The graph shows the price of 2 similar computers and their age in years.

Comparing computers



Which one of these statements is true?

- Computer B is older and less expensive than computer A.
- Computer A is newer and less expensive than computer B.
- Computer A is older and more expensive than computer B.
- Computer B is newer and more expensive than computer A.

7

Peter wants to paint his bedroom walls.

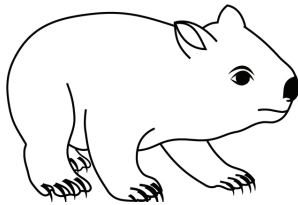
What information will best help him decide how much paint to buy?

- volume of room
- capacity of room
- perimeter of all walls
- area of all walls



8

The top speed of this wombat is 660 metres per minute.



What is the top speed of the wombat in metres per second?

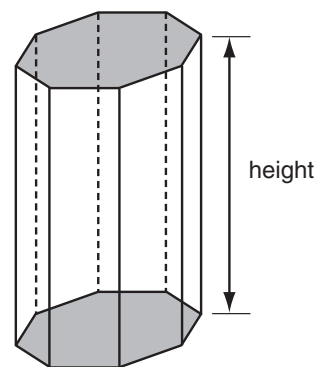
- 11 66 110 600

9

For any prism the surface area (S) is calculated by multiplying the perimeter of its base (p) by its height (h) and adding twice the area of the base (A).

Which one of these formulas could be used for this calculation?

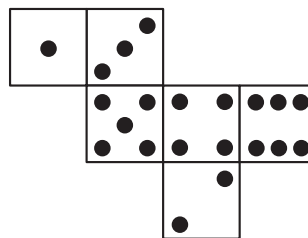
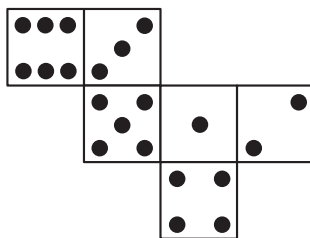
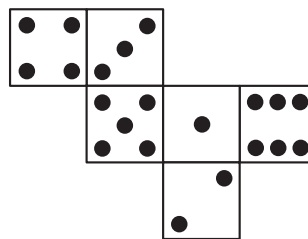
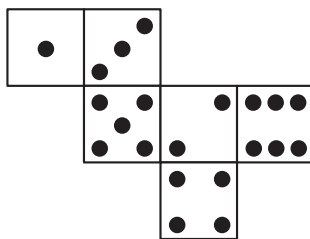
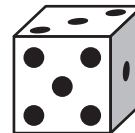
- $S = 2phA$
 $S = ph + A$
 $S = ph + 2A$
 $S = 2ph + 2A$



10

Opposite faces on a standard die always add up to 7.

Which is a correct net for a standard die?





11

A water tank has a capacity of 6.25 kilolitres.

How many **litres** does the water tank hold when it is full?

625

6025

6250

62 500

12

This block has 6 faces which are numbered from 1 to 6.

Vicky throws the block 1000 times to test it and records the outcomes.



Number on top face	1	2	3	4	5	6
Frequency	150	360	146	144	68	132

What is the probability of rolling a 2 based on Vicky's results?

$\frac{1}{6}$

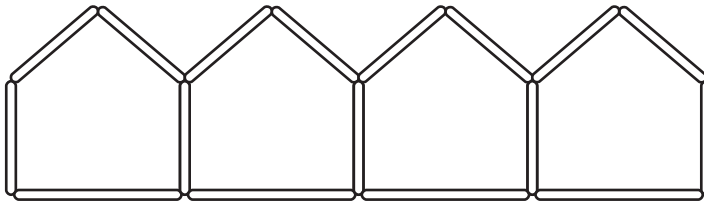
$\frac{1}{60}$

$\frac{9}{25}$

$\frac{3}{500}$

13

Sticks are used to make this pattern of pentagons.



In this pattern the rule for the number of sticks is

- $5 \times$ number of pentagons.
- $4 \times$ number of pentagons.
- $5 \times$ number of pentagons $- 1$.
- $4 \times$ number of pentagons $+ 1$.

14

A rule for y in terms of x is $y = 6 - 4x$.

When $x = 3.75$ the value of y is

-9

-1.75

7.5

9



15

Which of these are always equal in length?

- the opposite sides of a trapezium
- the opposite sides of a parallelogram
- the diagonals of a trapezium
- the diagonals of a parallelogram

16

When this kettle is full of water it has a mass of 2900 grams.



When the kettle is half full of water it has a mass of 2050 grams.

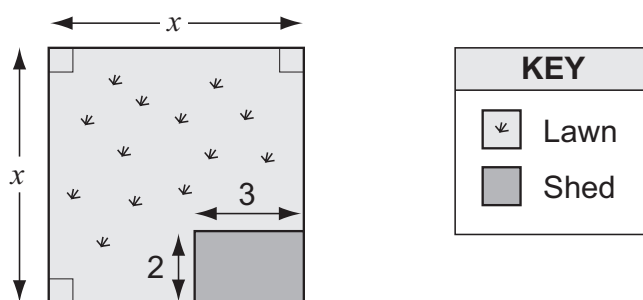
What is the mass of the kettle when it is empty?

grams

17

Sue drew this plan of a square block of land.

All measurements are given in metres.



The area of the lawn in square metres is

$x^2 - 6$

$x^2 + 6$

$2x^2 - 5$

$2x^2 - 6$



18

Mira made this table showing population data over two years for the six Australian states.

Some data for South Australia is not shown.

Population of Australian States			
	2002 Population	2003 Population	Percentage increase from previous year
NSW	6 662 212	6 716 277	0.8%
Vic	4 884 952	4 947 985	1.3%
Qld	3 754 154	3 840 111	2.3%
SA	1 522 475	?	0.6%
WA	1 936 902	1 969 046	1.7%
Tas	474 305	479 958	1.2%

What was the population of South Australia (SA) closest to in 2003?

2 537 500

2 436 000

1 613 800

1 531 600

19

Which of these percentages is closest in value to $\frac{7}{9}$?

76%

77%

78%

79%

20

Kiri has to find the value of this expression **without** a calculator.

$$20 - 12 \times \sqrt{9.5 + 6.5}$$

Which calculation should she do first?

$20 - 12$

$12 \div 9.5$

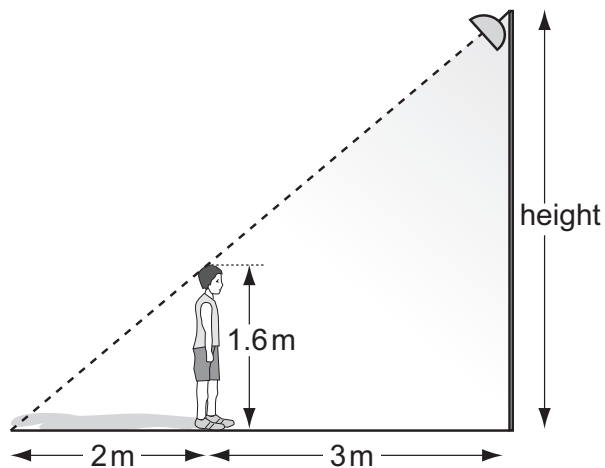
$\sqrt{9.5}$

$9.5 + 6.5$



21

Joe is 1.6 m tall. His shadow is 2 m long when he stands 3 m from the base of a floodlight.



What is the height of the floodlight?

2.4 m

2.6 m

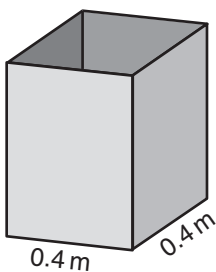
4.0 m

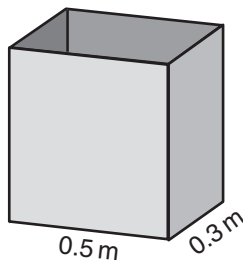
4.2 m

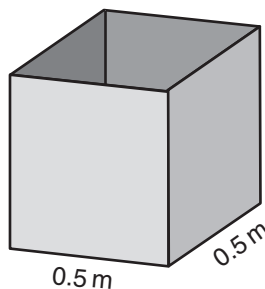
22

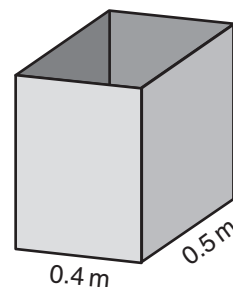
A factory makes metal boxes. The base and sides of the boxes are rectangular. The height of each box is 0.8 metres.

Which box has a volume of 0.16 cubic metres?







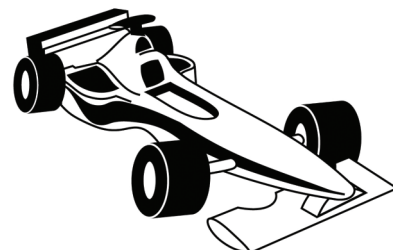


23

A racing car used 255 litres of fuel to complete a 340 km race.

On average, how many litres of fuel did the car use every 100 km?

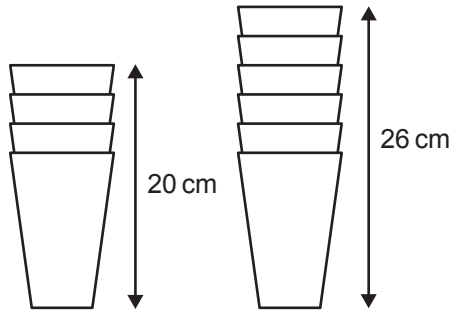
litres per 100 km





24

A stack of 4 cups is 20 cm tall.
A stack of 6 cups is 26 cm tall.



Which rule can be used to work out the height, in centimetres, of a stack of n cups?

$6n - 10$

$6n - 4$

$3n + 11$

$3n + 8$

25

This list shows the number of films that nine members of a film club watched in April.

Number of films watched	0, 1, 2, 2, 3, 4, 5, 5, 5
-------------------------	---------------------------

Which of the following is true for this data?

- mean $>$ median = mode
- mean $<$ median $<$ mode
- mean = median = mode
- mean = median $<$ mode

26

What is the value of $2 + 5x - x^2$ when $x = -2$?

-12

-4

8

16

27

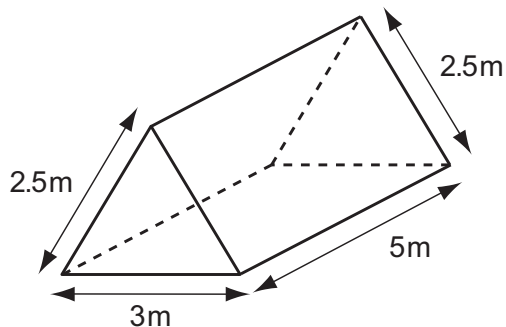
The cost in dollars to print n books is $500 + 10n$.

How many books are printed for a cost of \$15 000?



28

This solid triangular prism needs all its faces painted.
The area of each triangular face is 3 m^2 .



What is the total area to be painted? m^2

29

A builder needs 6.5 cubic metres of concrete for a job.
This table shows the mixture for the concrete.

cement	sand	small stones	water
2 parts	4 parts	6 parts	1 part

How many cubic metres of sand does the builder need?

cubic metres

30



When this car moves forward by 180 cm, each wheel does one full turn.

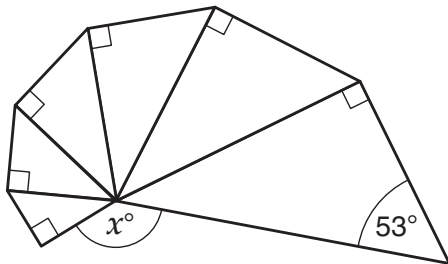
What is the diameter of the wheels to the nearest centimetre?

cm



31

A model of how a shell grows can be made using enlarged copies of the same triangle.
Here is a model.



What is the value of x ?

32

A rectangular sheet of paper had a width of 841 millimetres.
Its area was 1 square metre.

What was its length to the nearest millimetre?

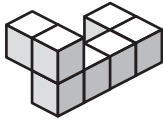
millimetres

STOP – END OF TEST

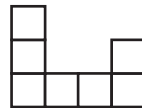
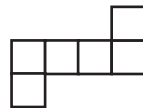
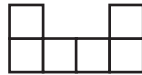
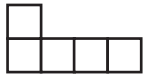


1

Seven cubes are joined to form the following object.

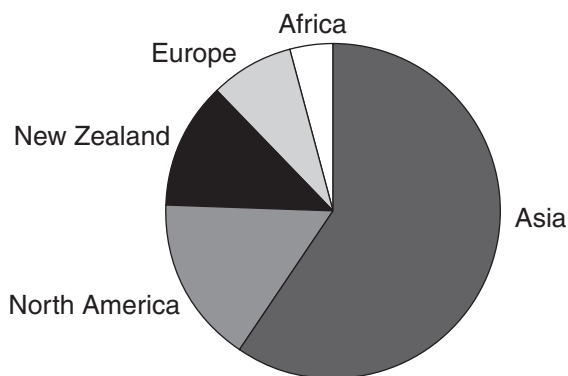


What will the shape look like from above?



2

The diagram shows the proportion of flights to different international regions for an airline.



One region makes up about 60% of the airline's flights.

Which region is it?

Asia



Europe



North America



New Zealand



3

Tanya recorded temperatures on a mountain over four days.

Which list gives four temperatures arranged in order from lowest to highest?

0°C , -3°C , 4°C , -5°C

-3°C , -5°C , 0°C , 4°C

-5°C , 4°C , -3°C , 0°C

-5°C , -3°C , 0°C , 4°C



4

Steven cuts his birthday cake into 8 equal slices.

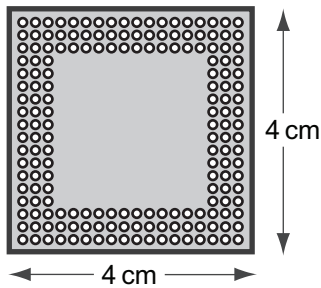
He eats 25% of the cake in whole slices.

How many slices of cake are left?

5

A computer chip has dimensions 8 mm × 8 mm.

A scale drawing is shown below.

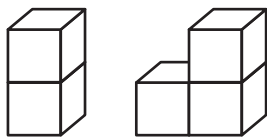


What scale is used in the drawing?

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

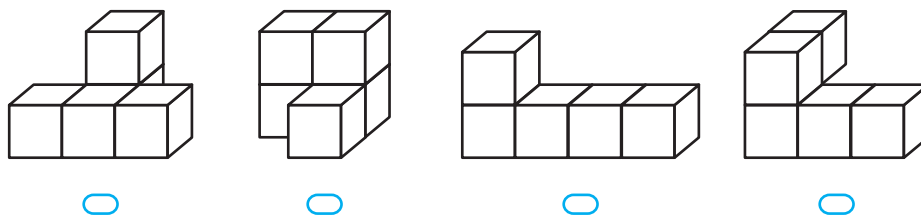
6

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



He then joined the 2 objects together.

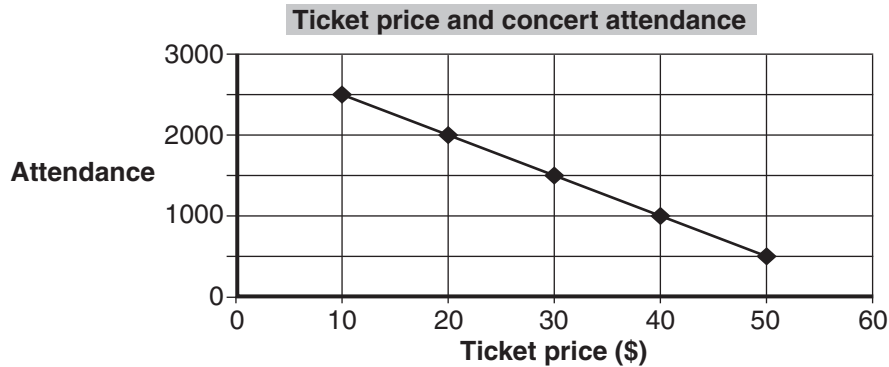
Which object below could **not** be made using Kevin's 2 objects?





7

Jack drew this graph to show how attendance at concerts is related to ticket price.

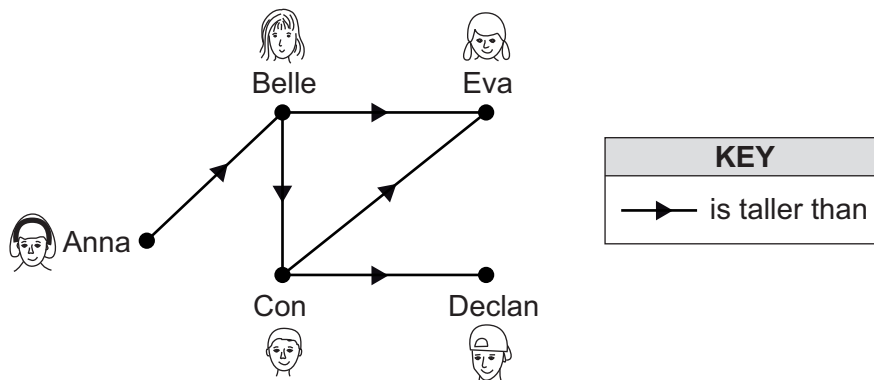


Which statement best describes the graph?

- As the ticket price goes up, attendance goes down.
- As the ticket price goes up, attendance goes up.
- As the ticket price goes down, attendance goes down.
- As the ticket price goes down, attendance stays the same.

8

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



Which student is the tallest?

- Anna
- Belle
- Con
- Declan
- Eva



9

Claire thinks of a number, n .
She multiplies the number by itself.
She then halves that answer and subtracts 10.

Which expression shows what Claire did?

$$\frac{2n - 10}{2}$$

$$\frac{2n}{2} - 10$$

$$\frac{n^2}{2} - 10$$

$$\frac{n^2 - 10}{2}$$

10

Helen has 24 red apples and 12 green apples.

What fraction of the apples are green?

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




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

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

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

11

Elli was playing a video game.
In the game she had to collect objects that are worth points.
The pictures show how many points she scored in three games.

Game 1	Game 2	Game 3
		
170 points	150 points	120 points

In Game 4 she collected these three objects: 

How many points did she score in Game 4?

12

Which of these is the longest distance?

0.1203 km

123 m

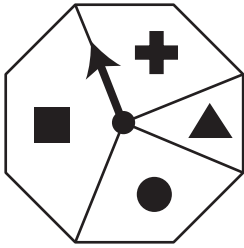
1230 cm

12 030 mm



13

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



14

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?

40



60



400



800



15

Sally has seen four movies.

The ticket prices were \$13, \$8, \$10 and \$10.

The next movie she plans to see is in 3D and the ticket price is \$34.

Which of these will **not** change after Sally sees the next movie?

- the median of her ticket prices
- the mean of her ticket prices
- the range of her ticket prices
- the total cost of her tickets

YEAR 9 NUMERACY (NON-CALCULATOR)



16

In a gym class, 29 students took turns jumping.

Pete recorded the height each student jumped.

Height (cm)

3	2 4
4	1 5 6
5	2 4 4 8 9
6	1 1 3 4 5 6 6 8 9
7	2 2 5 7 8
8	3 5 5
9	1 2

Key: 5 | 2 means 52

What is the median height?

63 cm

64 cm

65 cm

66 cm

17

Jill lives in a street that runs directly north–south.

Her house is north of the park and west of the school.



What street does Jill live in?

Adams St

Bonnel St

Station St

Main St

YEAR 9 NUMERACY (NON-CALCULATOR)



18

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

$7m + 1$

$10m + 1$

$10m + 2$

$12m$

19

Jade buys a 500 gram bag of beads at a market.
Each bead has a mass of 0.48 grams.

Which of these is the best estimate for the number of beads in the 500 gram bag?

100

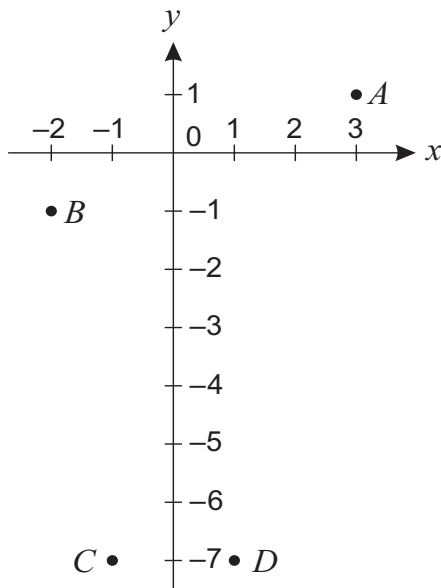
250

1000

2500

20

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

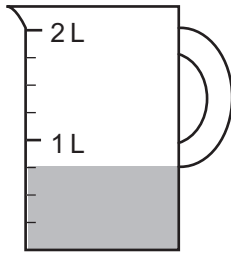
B and D

A and C



21

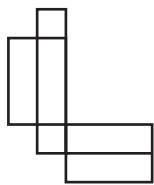
This jug has some milk in it.



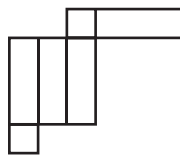
If Eve adds an extra 500 mL of milk to the jug,
how many millilitres (mL) of milk will then be in the jug?

mL

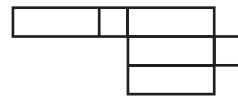
22



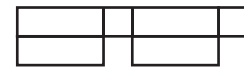
P



Q



R



S

Only two of these nets form a closed rectangular prism.

Which two nets are they?

- P and R
- P and Q
- Q and R
- R and S

23

The height of a door is 210 cm.

Darren is $\frac{5}{6}$ of the height of the door.

What is Darren's height?

cm

YEAR 9 NUMERACY (NON-CALCULATOR)



24

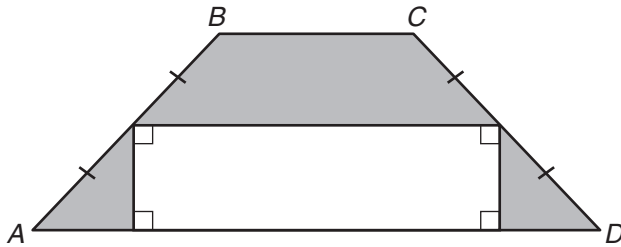
$$5b - 4 = 2b + 17$$

What is the value of b in this equation?

$b =$

25

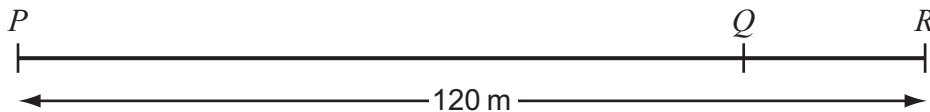
The area of the rectangle in this diagram below is 10 cm^2 .



What is the area of the trapezium $ABCD$?

cm^2

26



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

27

In February 2010, the population of the world was approximately 6 800 000 000 people.

Another way of writing this number is

6.8×10^8

6.8×10^9

68×10^9

68×10^{10}

YEAR 9 NUMERACY (NON-CALCULATOR)



28

A number of students were asked this question:

“How many cousins do you have?”

The lowest answer given was 6.

The highest answer given was 20.

The total of all the answers given was 50.

What is the smallest number of students who could have been asked?

29

A ticket costs \$75.

A fee of 10% is added to the price.

Which calculation will give the new price?

$75 + 10$

$75 + 0.1$

75×0.1

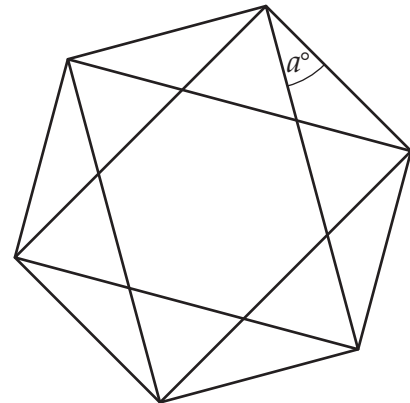
75×1.1

30

This design is drawn inside a regular hexagon.

What is the size of the angle marked a ?

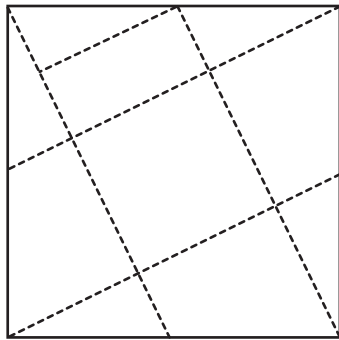
degrees





31

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



Altogether, how many triangular tiles are used?

32

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

$$h < 4a - 3 \text{ for values of } a \text{ between 1 and 10}$$

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 $a = 6$

STOP – END OF TEST

NAPLAN Numeracy Example Test – Year 9 Calculator Allowed

Question number	Answer key	Question number	Answer key
Y9CA Q01	C	Y9CA Q17	A
Y9CA Q02	B	Y9CA Q18	D
Y9CA Q03	B	Y9CA Q19	C
Y9CA Q04	D	Y9CA Q20	D
Y9CA Q05	-2.5	Y9CA Q21	C
Y9CA Q06	A	Y9CA Q22	D
Y9CA Q07	D	Y9CA Q23	75
Y9CA Q08	A	Y9CA Q24	D
Y9CA Q09	C	Y9CA Q25	D
Y9CA Q10	C	Y9CA Q26	A
Y9CA Q11	C	Y9CA Q27	1450
Y9CA Q12	C	Y9CA Q28	46
Y9CA Q13	D	Y9CA Q29	2
Y9CA Q14	A	Y9CA Q30	57
Y9CA Q15	B	Y9CA Q31	138
Y9CA Q16	1200	Y9CA Q32	1189

NAPLAN Numeracy Example Test – Year 9 Non-Calculator

Question number	Answer key	Question number	Answer key
Y9NC Q01	B	Y9NC Q17	A
Y9NC Q02	A	Y9NC Q18	C
Y9NC Q03	D	Y9NC Q19	C
Y9NC Q04	6	Y9NC Q20	D
Y9NC Q05	B	Y9NC Q21	1250
Y9NC Q06	A	Y9NC Q22	B
Y9NC Q07	A	Y9NC Q23	175
Y9NC Q08	A	Y9NC Q24	7
Y9NC Q09	C	Y9NC Q25	20
Y9NC Q10	B	Y9NC Q26	C
Y9NC Q11	145	Y9NC Q27	B
Y9NC Q12	B	Y9NC Q28	4
Y9NC Q13	C	Y9NC Q29	D
Y9NC Q14	A	Y9NC Q30	30
Y9NC Q15	A	Y9NC Q31	20
Y9NC Q16	C	Y9NC Q32	D