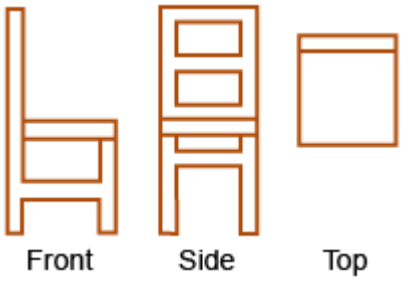
Year 9 Diagnostic 1 for NAPLAN (Non-calculator)

Question 1



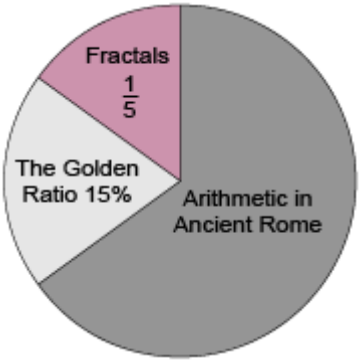
Which of the chairs below is shown in the above views?

a. 

b. 

c. 

Question 2



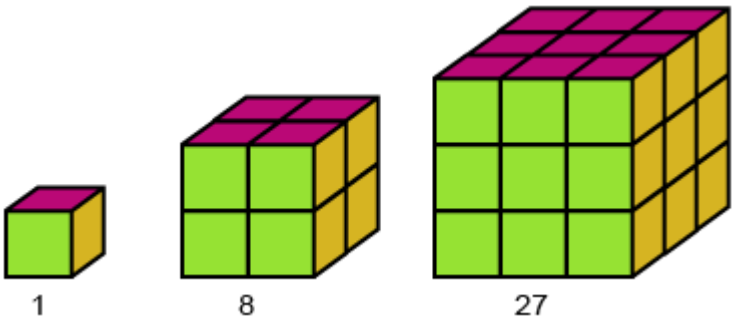
Students were asked to select one of three assignment topics: Arithmetic in Ancient Rome, Fractals or The Golden Ratio.

A fifth of the students chose ‘Fractals’ and 15% chose ‘The Golden Ratio’.

What percentage chose ‘Arithmetic in Ancient Rome’?

☐%

Question 3



Cubic numbers can form solid cubes.

What would be the 4th cubic number?

Question 4

The 8 am train from Parkville to Big City is sometimes early and sometimes late.

The table shows the number of minutes the train is late or early on each morning for five days.

Mon	Tues	Wed	Thurs	Fri
+3	+2	−4	−1	0

What is the greatest time difference from the scheduled departure time?

minutes

Question 5

$a = -4$, $b = -6$, $c = -5$

so $a + b - c =$

Question 6

What is the total mass of the bananas?
(Use decimals to show your answer.)

☐ kg

Question 7

This model car was created to a 1: 90 scale.

If the model is 4 cm long, how long was the real car?

Answer is in *metres*.

☐ m

Question 8

A box holds 18 chocolates and has a gross mass of 310 g.

Each chocolate weighs the same.

When 8 chocolates have been eaten, the box and the remaining chocolates together have a mass of 210 g.

What is the mass of each chocolate?

☐ g

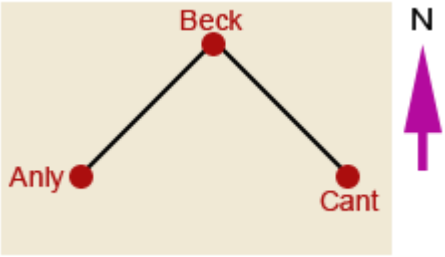
Question 9

A tank of water was $\frac{3}{4}$ full. Watering the animals used $\frac{3}{10}$ of a full tank and another $\frac{1}{5}$ of a full tank was used to water the vegetables.

What fraction of a full tank was left?

$\frac{\square}{\square}$

Question 10



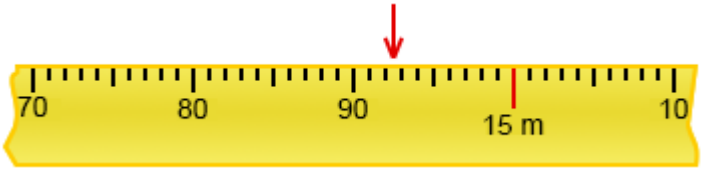
The four towns Anly, Beck, Cant and Dell form a square.

Where would the town of Dell be on the map?

Select ***all true*** statements.

a. ☐Due south of Beck
b. ☐SE of Beck
c. ☐NE of Cant
d. ☐SW of Cant
e. ☐SE of Anly
f. ☐Due east of Anly

Question 11



The arrow shows a measurement of:

a) 92.5 cm

b) 14 m 92 cm 5 mm

c) 14 m 95 cm

d) 14 m 95 mm

Question 12

A car travelled 288 km in $4\frac{1}{2}$ hours. What was the average speed?

a) $\text{Speed} = 288 \times 4\frac{1}{2}\ \text{km/h}$
$= 1296\ \text{km/h}$

b) $\text{Speed} = 4\frac{1}{2} \div 288\ \text{km/h}$
$= 0.015625\ \text{km/h}$

c) $\text{Speed} = 288 \div 4\frac{1}{2}\ \text{km/h}$
$= 64\ \text{km/h}$

Question 13

A quadrilateral has two sides measuring 5 cm and two sides measuring 8 cm.

Which type of shape might this be? Remember to select ***all*** correct possibilities.

a. ☐ A rhombus
b. ☐ A parallelogram
c. ☐ A rectangle
d. ☐ A kite

Question 14

Ann's computer has a total capacity of 60 GB. At present she is using 39% of the capacity.

How much free space does she have?

[ ] GB

Question 15

Tan travels 1 km 90 m to school, Joe travels 1.8 km, and Mike travels 1689 m.

Who travels the longest distance?

a. Tan
b. Joe
c. Mike

Question 16

Wyndham Ferries					
Quay	0715	1045	1230	1420	1750
Bell Harbour	0735	1105	1250	1440	1810
Nords Head	0810	1140	1325	1515	1845
Sandy Wharf	0827	1157	1342	1532	1902

How long does it take the ferry to travel from Bell Harbour to Nords Head?

☐ minutes

Question 17

The sum of q and 7 is multiplied by 2 and then divided by 5.

The algebraic expression for this sentence is:

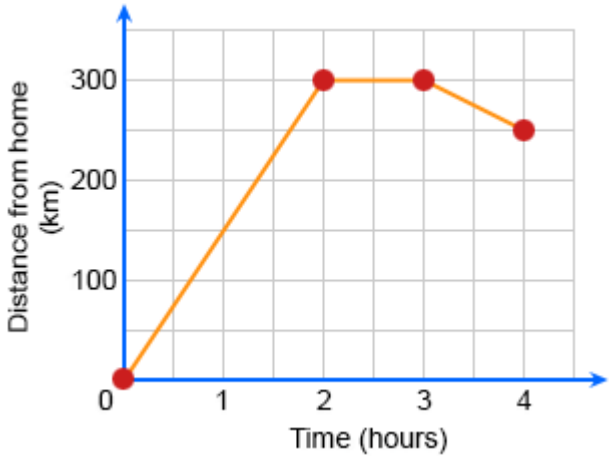
a) $\frac{2(q+7)}{5}$

b) $\frac{2q+7}{5}$

c) $2\ q + 7 \div 5$

d) $2\ q + \frac{7}{5}$

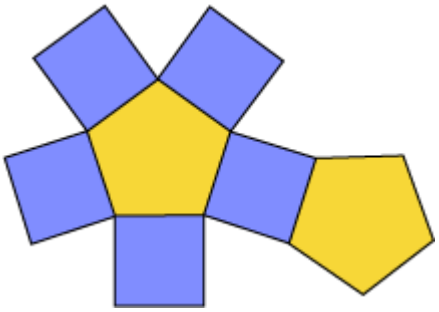
Question 18



What is the total distance travelled on this journey?

☐ km

Question 19



This is the net for:

a. a pentagonal prism
b. a pentagonal pyramid
c. a square prism
d. a square pyramid

Question 20

Stem	Leaf
25	6
26	1 3 4 8
27	3 4 5 7 9
28	2 3 6
29	1

The median of this data is _____.

Question 21

To check whether $10 - x$ is equivalent to $x - 10$, John substituted $x = 10$ into each expression.

He found that the expressions:

a) both gave 0, so they are equivalent expressions

b) both gave 0, but trying other values will show they are not equivalent

c) gave different values, so he should try another value for x

d) gave different values, so they are not equivalent

Question 22

The perimeter of a square is 40 cm.

What is its area?

_____ cm^2

Question 23

Think about the size of $\frac{17}{30}$. The answer to $2\frac{1}{2} + \frac{17}{30}$ will be:

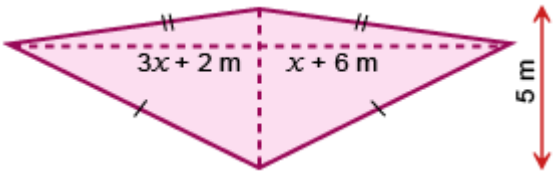
a. between $2\frac{1}{2}$ and 3

b. between 3 and $3\frac{1}{2}$

c. between $3\frac{1}{2}$ and 4

d. greater than 4

Question 24



By calculating the value of x , determine the area of the kite.

Area of the kite = [ ] m^2

Question 25

Elsie drew up this table of values for an equation.

x	-1	0	1
y	2	1	0

The equation which fits this table of values is:

a) $y = 2x - 1$

b) $y = 1 - 2x$

c) $y = x - 1$

d) $y = 1 - x$

Question 26

One light year is the distance that light travels in one year.

Light travels about 10^{13} km in one year.

About how far away, in light years, is a star that is 10 000 000 000 000 000 km from the Earth?

a) 10^{16} light years

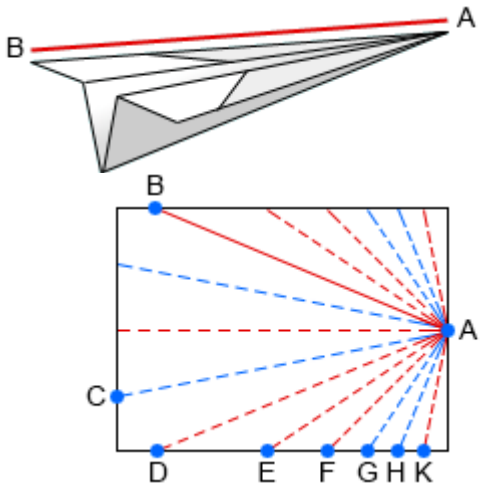
b) 1 000 000 light years

c) One thousand light years

d) Ten light years

Question 27

A piece of paper was folded to make a paper aeroplane, and then unfolded.



Red dashed lines show where the paper had been folded up. Blue dashed lines show where it had been folded the opposite way. All the small angles between any two adjacent folds are equal.

Which fold is perpendicular to AB?

a) AD b)AF c)AG d)AH e)AK

Question 28

The area of a rectangle is found using the formula:

$A = LW$

where A = area, L = length and W = width

If you double the length and triple the width of a rectangle, you will multiply the area by:

Question 29

A cup contains 234 mL of water. Lizzie drank a third of the water.

How much water is left?

[ ] mL

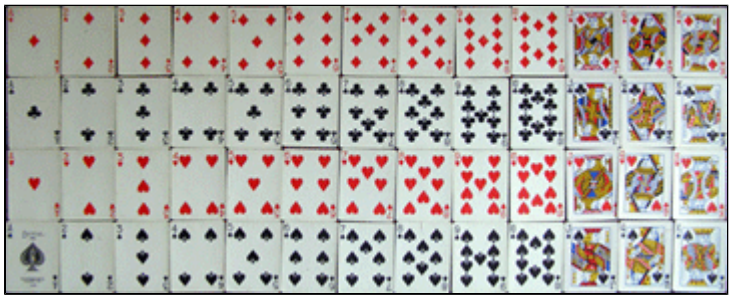
Question 30

4% of the kangaroos captured for a study showed signs of a particular disease.

If 45 kangaroos had the disease, and only 12% of the population in a region were captured for the study, how many kangaroos are there in the region?

[ ]

Question 31



Which of the following events have the same probability of happening as not happening?

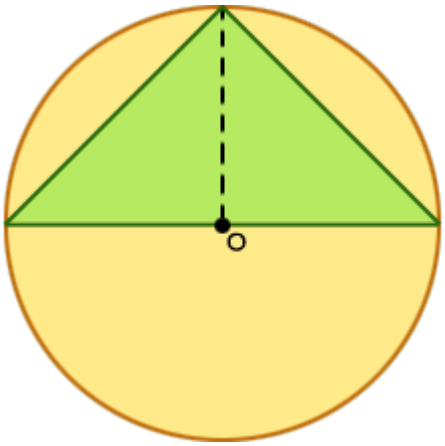
a) ☐ Tossing a tail with a fair coin

b) ☐ Throwing an odd number with a fair die

c) ☐ Throwing a two with a fair die

d) ☐ Drawing a red card from a standard pack of 52 playing cards

Question 32



Area of triangle $= \frac{1}{2} \times$ base $\times$ height

If the area of the circle is 40 cm^2, calculate the area of the triangle correct to one decimal place.

[ ] cm^2