

Question 1 - (1 marks available)

Write 8246 correct to the nearest thousand.

Total marks: 1

Question 2 - (2 marks available)

a) Write the following numbers in order of size.
Start with the smallest number.

-7 5 0 -3 15

(1)

b) Write the following numbers in order of size.
Start with the smallest number.

0.054 0.54 0.45 0.405

(1)

Total marks: 2

Question 3 - (1 marks available)

Write 60% as a fraction.

Total marks: 1

Question 4 - (1 marks available)

Here is a list of four fractions.

$\frac{9}{27}$ $\frac{2}{6}$ $\frac{5}{18}$ $\frac{15}{45}$

One of these fractions is not equivalent to $\frac{1}{3}$

Write down this fraction.

Total marks: 1

Question 5 - (1 marks available)

Write down the first even multiple of 9

Total marks: 1

Question 6 - (2 marks available)

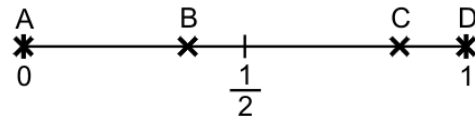
a) Simplify $4 \times 5p$ (1)

b) Simplify $9y - 6y + y$ (1)

Total marks: 2

Question 7 - (5 marks available)

Here is a probability scale.
It shows the probability of each
of the events A, B, C and D.



a) Write down the letter of the event that is *impossible*. (1)

b) Write down the letter of the event that is *likely*. (1)

A bag contains 12 beads.

- 2 of the beads are blue.
- 1 of the beads is green.
- 3 of the beads are purple.
- The rest of the beads are red.

Julia takes a bead from the bag at random.

c) Show that the probability that this bead
is purple or red is $\frac{3}{4}$

(3) Total marks: 5

Question 8 - (2 marks available)

3 kg of rump steak costs £42
Adel buys 4 kg of rump steak.

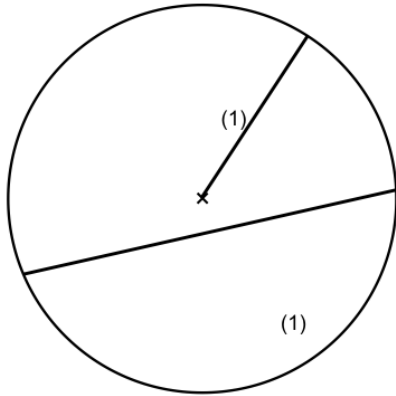
Work out how much Adel pays.

Note: Please give your final answer in £.

Total marks: 2

Question 9 - (2 marks available)

The centre of this circle is marked with a cross (×).
Label the lines drawn using the correct circle vocabulary.



Total marks: 2

Question 10 - (3 marks available)

Adam and three friends go on holiday together for a week.

The costs of the holiday will be shared equally between the 4 friends.
These are:

- £1460 for 4 return plane tickets
- £720 for the accommodation
- £180 for the car hire for a week

How much does Adam have to pay for his share of the costs?

Note: Please give your final answer in £.

Total marks: 3

Question 11 - (2 marks available)

a) Alice says that all the factors of 8 are even.
Write down an example to show that Alice is wrong. (1)

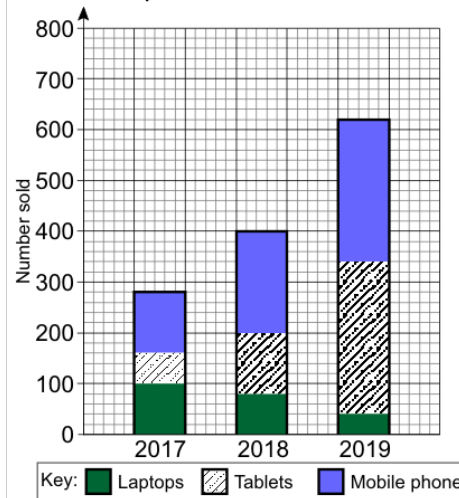
b) Alfie says that all the digits in odd numbers are odd.
Which of the numbers below show that Alfie is not correct? (1)

- A: 5634
- B: 7931
- C: 2977
- D: 3130

Total marks: 2

Question 12 - (6 marks available)

An IT shop sells laptops, tablets and mobile phones.
The composite bar chart shows information on sales over the last three years.



a) How many laptops were sold in 2017? (1)

b) Work out the total number of mobile phones sold in the 3 years. (3)

c) Which of the items had the greatest increase in sales over the 3 years?
Give a reason for your answer. (2)

Total marks: 6

Question 13 - (3 marks available)

A bar of steel is 340 cm long.

Issa cuts two 55 cm lengths off the bar.
He then cuts the rest of the bar into as many 40 cm lengths as possible.

Work out how many 40 cm lengths of bar Issa cuts.

Note: Please make your final answer clear by writing ... lengths

Total marks: 3

Question 14 - (4 marks available)

Anna, Laura and David each earn the same monthly salary.

Each month,

Anna **saves** 19% of her salary and spends the rest of it

Laura spends $\frac{17}{20}$ of her salary and **saves** the rest of it

amount of salary David **saves** : amount of salary he spends = 2 : 8

Work out who saves the most of their salary each month.
Show how you get your answer.

*Note: Please clearly label the workings for each person
and write your final answer as ... saves the most*

Total marks: 4

Question 15 - (2 marks available)

Work out 15% of 240 grams.

Total marks: 2

Question 16 - (6 marks available)

$$V = 5x + 2y$$

$$x = 3$$

$$y = -4$$

a) Work out the value of V .

(2)

b) Expand $3p(p + 5)$

(2)

c) Solve $4(k - 6) = 20$

(2)

Total marks: 6

Question 17 - (2 marks available)

In a box of chocolates, $\frac{1}{5}$ of the chocolates contain nuts.
The rest of the chocolates do not contain nuts.

Write down the ratio of the number of chocolates that contain nuts to the number of chocolates that do not contain nuts.

Give your answer in the form $1 : n$

Total marks: 2

Question 18 - (4 marks available)

$A = \{\text{multiples of 3 between 20 and 32}\}$
 $B = \{\text{odd numbers between 20 and 32}\}$
 $C = \{\text{even numbers between 20 and 32}\}$

a) List the members of $A \cup B$

*Note: Please clearly label your final answer with **members = ...*** (2)

b) List the members of $A \cap C$

*Note: Please clearly label your final answer with **members = ...*** (2)

Total marks: 4

Question 19 - (4 marks available)

a) Work out $4\frac{1}{7} + 1\frac{1}{2}$ (2)

b) Work out $4\frac{1}{2} \div \frac{3}{5}$
Give your answer as a mixed number in its simplest form. (2)

Total marks: 4

Question 20 - (3 marks available)

In a village

the number of houses and the number of flats are in the ratio $9 : 5$
the number of flats and the number of bungalows are in the ratio $10 : 3$

There are 30 bungalows in the village.

How many houses are there in the village?

*Note: Please make your final answer clear by writing ... **houses***

Total marks: 3

Question 21 - (4 marks available)

Lucy buys 7 kg of nuts to sell.
She pays £10 for the nuts.

Lucy puts all the nuts into bags.
She puts 350 g of nuts into each bag.
She then sells each bag of nuts for 75p.

Lucy sells all the bags of nuts.

Work out her percentage profit.

Total marks: 4

Question 22 - (3 marks available)

A cycle race in France is 2214.5 miles in length.

Miguel knows his average speed from previous races is 21.14 miles per hour.
For this next race in France he is planning on cycling 9 hours per day.

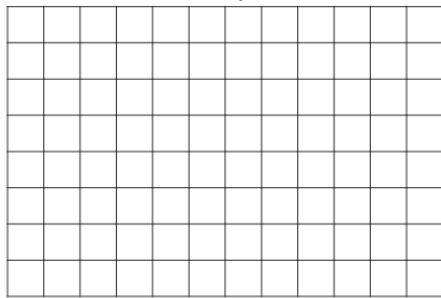
Estimate how many days Miguel will take to complete the race.

Total marks: 3

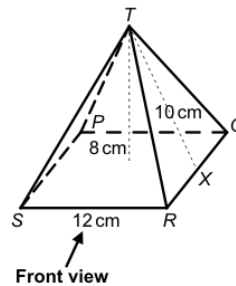
Question 23 - (6 marks available)

Here is a solid square-based pyramid.
The base of the pyramid is a square of side 12 cm.
The height of the pyramid is 8 cm.
 X is the midpoint of QR and $XT = 10$ cm.

- a) Draw the front elevation of the pyramid
from the direction of the arrow.
Use a scale of 1 square to 1 cm.



(2)



- b) Work out the total surface area
of the pyramid.

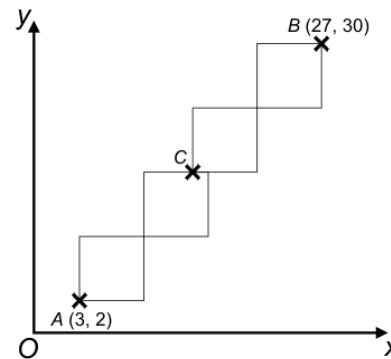
(4)

Total marks: 6

Question 24 - (5 marks available)

A pattern is made from four congruent squares.

The sides of the squares are parallel to the axes.



Point A has coordinates $(3, 2)$
Point B has coordinates $(27, 30)$
Point C is marked on the diagram.

Work out the coordinates of C .

Total marks: 5


Question 25 - (4 marks available)

P and Q are points on the line $y = 2 - 4x$

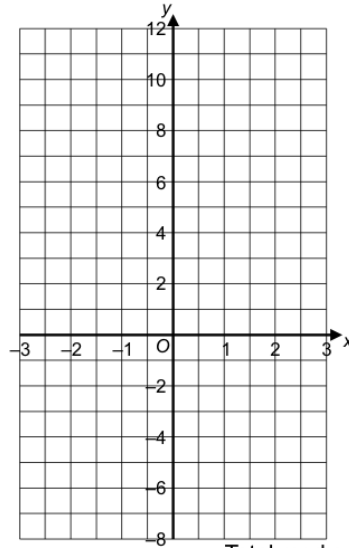
a) Complete the coordinates of P and Q .

$P(0, \quad)$ $Q(\quad , 0)$ (2)

b) Plot points P and Q on the graph.

Use the  tool to plot the coordinates. (1)

c) Draw the line $y = 2 - 4x$ for values of x from -2 to 2 (1)



Total marks: 4

Question 26 - (2 marks available)

$$\mathbf{a} = \begin{pmatrix} 2 \\ 4 \end{pmatrix} \quad \mathbf{b} = \begin{pmatrix} 3 \\ -2 \end{pmatrix}$$

Work out $3\mathbf{a} + \mathbf{b}$ as a column vector.

$\begin{pmatrix} \quad \\ \quad \end{pmatrix}$

Total marks: 2