

Answer ALL TWENTY FOUR questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

- 1 Here is a list of numbers in a box.

6	8	17	36	44	76	91
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From the numbers in the list, write down

- (a) a multiple of 11

.....
(1)

- (b) a factor of 30

.....
(1)

- (c) a square number

.....
(1)

- (d) a prime number

.....
(1)

- (e) two numbers whose sum is 84

..... and
(1)

(Total for Question 1 is 5 marks)



2 The students in class 7T were asked how they got to school one day.

Here is a list of their method of travel to school.

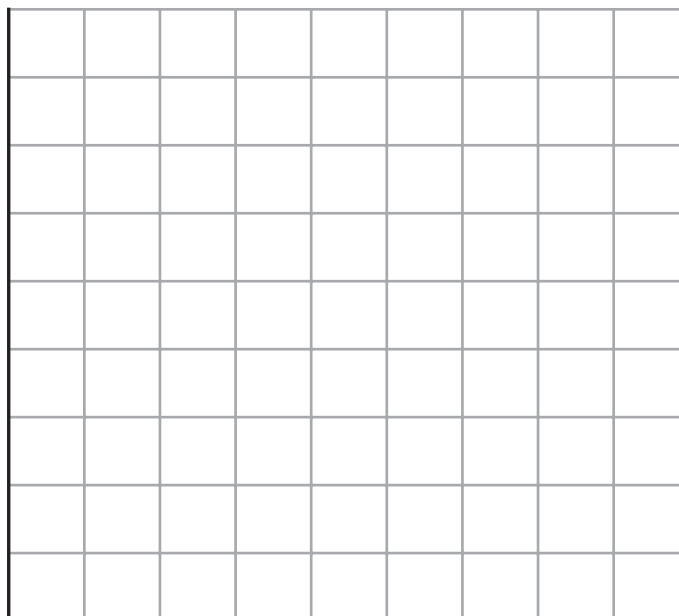
walk bus bicycle walk bus
 bicycle walk car bus bicycle
 bus bicycle bus car walk
 walk bus walk walk car

(a) Complete the frequency table for the methods of travel in the list.

Method of travel	Tally	Frequency
walk		
bus		
bicycle		
car		

(2)

(b) Draw a bar chart for the information in your table.



(3)

(Total for Question 2 is 5 marks)



3 The temperature in New York is -2°C

At the same time, the temperature in Rabat is 16°C higher than the temperature in New York.

(a) Work out the temperature in Rabat.

..... $^{\circ}\text{C}$
(1)

Also, at the same time, the temperature in Helsinki is 17°C lower than the temperature in New York.

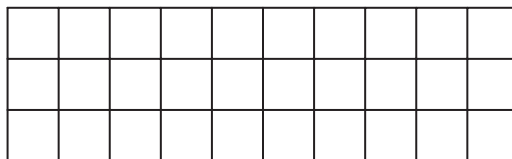
(b) Work out the temperature in Helsinki.

..... $^{\circ}\text{C}$
(1)

(Total for Question 3 is 2 marks)



4 A rectangle is made from 30 small coloured square tiles.



There are yellow tiles, blue tiles and red tiles.

30% of the rectangle is made from yellow tiles.

$\frac{1}{3}$ of the rectangle is made from blue tiles.

The rest of the rectangle is made from red tiles.

(a) Work out the number of red tiles.

.....
(3)

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

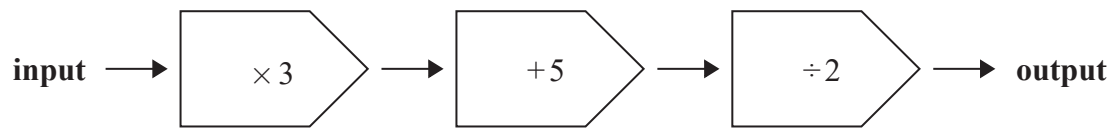
0.76 25% 0.0766 8% 0.026

.....
(2)

(Total for Question 4 is 5 marks)



5 Here is a number machine.



(a) Work out the output when the input is 7

.....
(1)

(b) Work out the input when the output is 160

.....
(2)

When the input is n , the output is P .

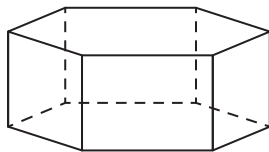
(c) Find a formula for P in terms of n .

.....
(2)

(Total for Question 5 is 5 marks)



6 The diagram shows a solid prism.



(a) How many vertices has the prism?

.....
(1)

(b) How many faces has the prism?

.....
(1)

(c) Using ruler and compasses only, in the space below construct the equilateral triangle ABC with sides of length 7 cm.
You must show all your construction lines.

Side AB has already been drawn for you.

A ————— B

(2)

(Total for Question 6 is 4 marks)



7 (a) Simplify $p + p + p + p + p + p$

.....
(1)

(b) Simplify $5y^2 + 6y^2 - 3y^2$

.....
(1)

(c) Simplify $e \times e \times e \times e \times e$

.....
(1)

(d) Simplify $5c \times 4d$

.....
(1)

(e) Solve $x - 7 = 19$

$x =$
(1)

$18^2 + 15^2 - 5^3 = 4n$

(f) Work out the value of n .

$n =$
(2)

(g) Factorise $9t - 6$

.....
(1)

(Total for Question 7 is 8 marks)



8 Paolo has a bag of flour.
The flour in the bag has a weight of 3 kilograms.

Paolo makes 8 pies using the flour in the bag.

3 of the pies each need 150 grams of the flour.

5 of the pies each need 180 grams of the flour.

Work out the weight of flour that remains in the bag when Paolo has made these pies.
Give your answer in grams.

..... grams

(Total for Question 8 is 3 marks)

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

