Aldenham School

11+ Sample Paper

Subject: Mathematics

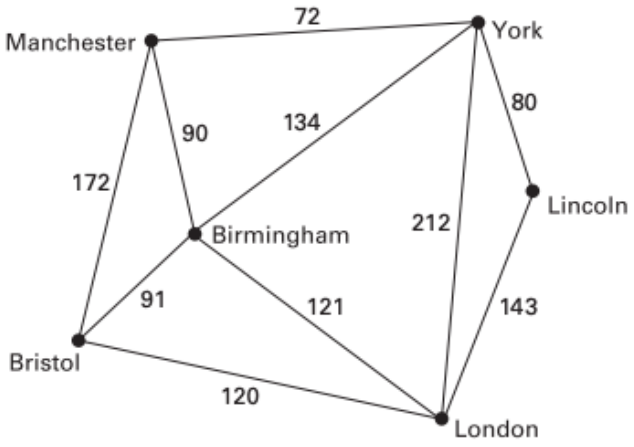
Time allowed: 45 mins

Instructions:

- Write your answers in the spaces provided in this booklet
- Show sufficient method to show how you obtained your answers
- Calculators MUST NOT be used in any question.
- Rulers may be used.

Mark: _____ / 55 %: _____

1. The diagram shows the distances in miles between some cities.



1a Which two cities are 121 miles apart?

.....

[1]

1b Josh is travelling from Bristol to York.

How much further is his journey if he travels via London, compared to travelling through Birmingham?

.....

[2]

2 A newspaper gives the crowd at a concert as 18,500 the nearest 100.
Which number could have been the actual crowd size?

(circle your answer)

18,599 18,439 18,487 19,500 [1]

3. Work out the following calculations

a) 284 x 46

.....
[2]

b) 142.5 ÷ 3

.....
[1]

4 A radio station recorded how many listeners it had each month.

Radio listeners	
Month	**Number of listeners**
August	9,837
September	9,828
October	9,839
November	9,852
December	9,818

What is the range of the numbers?

.....
[1]

5. Which statement is true?
(Circle your answer)

A $24 \times 70 = 48 \times 35$ B $24 \times 70 = 12 \times 35$

C $24 \times 70 = 48 \times 46$ D $24 \times 70 = 48 \times 140$

[1]

6. Fill in the gaps

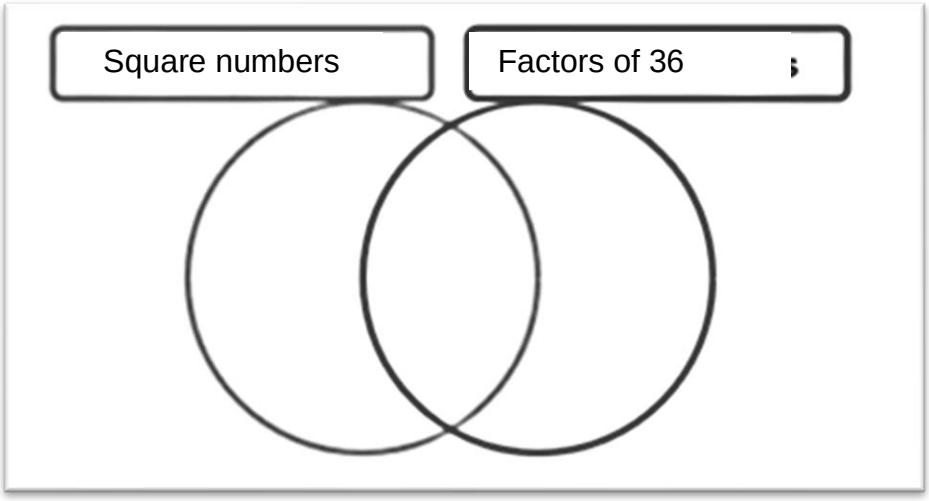
a) ….. x 6 = 420 b) $\sqrt{25} + \sqrt{36} =$ …….

c) 80 x 0.4 = …… d) …… + 15 = 12

[4]

7. Place these seven numbers in the correct places in the Venn Diagram.

4 6 9 16 24 25



[3]

8. In 2019 the cost of a bike was £240.

In 2020 the same bike was now sold for 15% more than in 2019.

How much did the bike cost in 2020?

£ .....

[2]

9. Clem has £6.

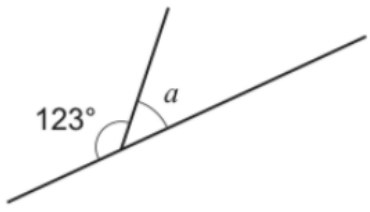
She spends some money in the shop and gets 50p change.

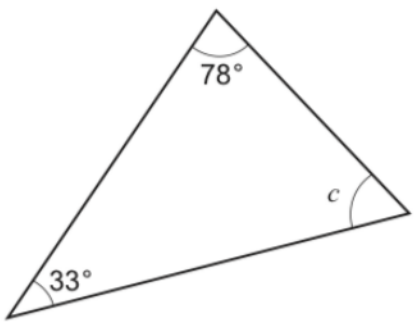
What fraction of her money did she spend? Simplify your answer.

.....

[2]

10. Calculate the size of the missing angles.





a = ... °

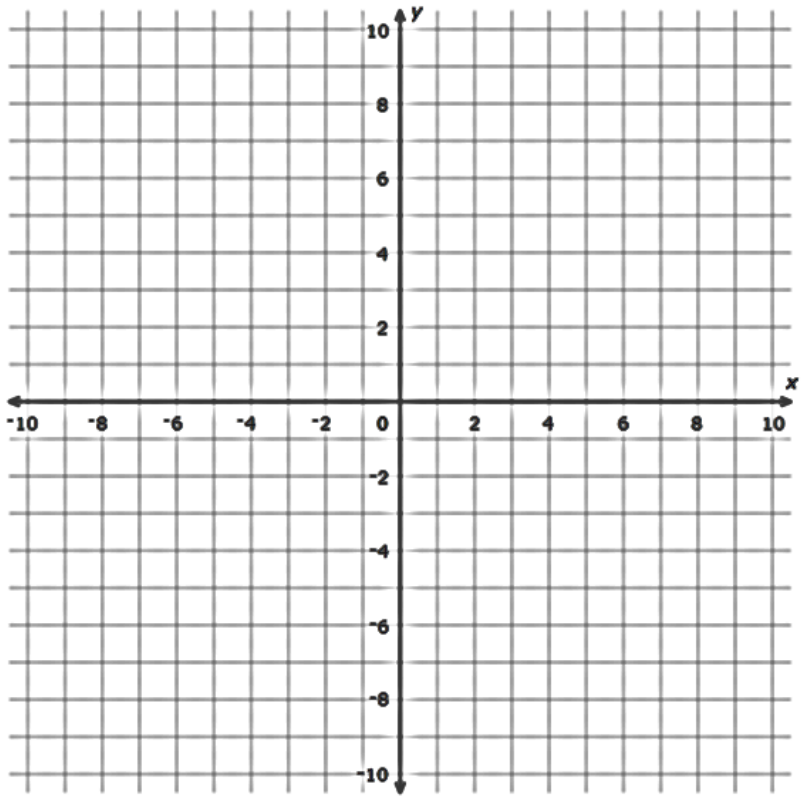
c = ... °

[2]

11. Three vertices of a rectangle are (-4, 3), (0, 7) and (8, -1).

11a. Plot these points on the axes below.

[2]



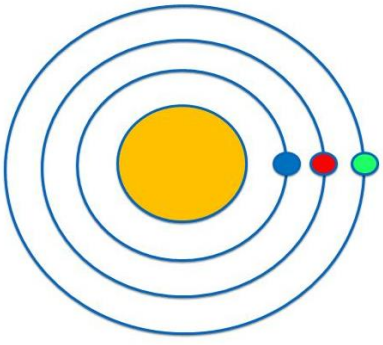
11b. Write down the co-ordinate of the missing vertex of the rectangle.

.....

[1]

12. Three planets orbit around a star.

In 2021 they are all lined up as shown in the diagram.

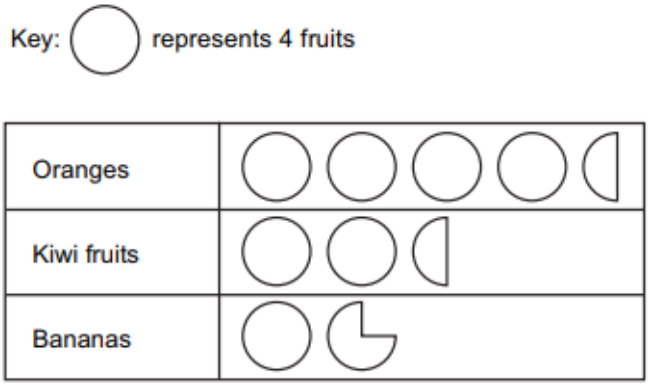


- Planet one takes 8 years to travel round the star.
- Planet two takes 12 years to travel round the star.
- Planet three takes 16 years to travel round the star.

In which year will the planets all line up again?

.....[2]

13 Joyleen is making fruit smoothies.
The pictogram shows information about the number of each type of fruit she has.



This is the recipe for one smoothie.

3 oranges
2 kiwi fruits
$1\frac{1}{2}$ bananas

Work out the maximum number of smoothies that Joyleen can make.

..... smoothies [2]

14. If these fractions were ordered from smallest to largest, which fraction would be in the **3rd position**?

$$\frac{1}{4} \quad \frac{1}{2} \quad \frac{3}{8} \quad \frac{15}{16} \quad \frac{6}{8}$$

.....
[1]

15) Circle the largest amount in 15a and 15b below

15a) ½ of 1.2 kg or 2 x 400g

15b) $\frac{2}{5}$ or 35%

[2]

16. Work out $\frac{4}{5} + \frac{2}{3}$.

Write your answer as a mixed fraction.

……..……..

[2]

17. Given that **a = 4**, **b = 7** and **c = -2** complete the following expressions with <, > or =.

17a) a ……. c + b

17b) $2a^2$ ……. 8a

[2]

18. Dr Mepham had an enormous chocolate bar which she shared amongst the students in her Further Maths A level class.

She gave each of her students one-twelfth of the chocolate bar.

One third of the bar was left.

How many students did she have in her class?

……..…….. children

[1]

19a Use the rule to write the next two numbers for each sequence.

Rule: Double the last number then add 1

2 5 11 ...

....

[1]

19b The rule for continuing a different sequence is

Double the previous term and add 5

The third term of this sequence is 27.

Work out the first term.

.....

[1]

20 Which is these calculations has the highest answer?

A 1 x 2 + 3 + 4 B 1 + 2 x 3 + 4

C 1 x 2 + 3 x 4 D 1 + 2 x 3 x 4 E 1 x 2 x 3 x 4 [1]

21a) Solve the following equation

$$6x = 66$$

x =……..

[1]

22b) Solve the following equation to find b.

$$10b - 3 = 27$$

b = ……..

[2]

22. Four grandchildren in a room are 2, 3, 5 and 10 years old.

The mean age of the grandchildren in the room increases by 2 years when a fifth grandchild enters.

How old is the fifth grandchild?

……..

[2]

23. Myla wants to carpet her bedroom floor with tiles.

The floor is a rectangle measuring 5 metres by 3 metres.

Carpet tiles

25 cm by 25 cm

The tiles measure 25cm by 25cm. They cost £1.50 each.

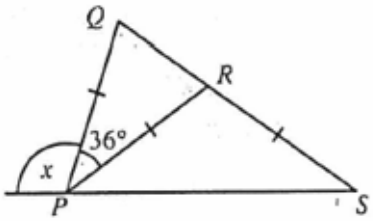
Myla buys the exact number of tiles needed and is given a 20% discount.

How much does she pay?

£ .....

[4]

24. Work out the angle marked x.



x = ... °

[2]

Please turn over …

25 In the subtraction sum on the right a, b and c are digits and a is less than b.

What is the value of c?

$$\begin{array}{r} b\ a \\ -\ a\ b \\ \hline c\ 6 \end{array}$$

……..

[2]

26 a, b and c are all positive.

We also know that:

$a \times b = 2$

$b \times c = 24$

$c \times a = 3$

What is the value of $a + b + c$?

……..

[2]

END