



Aldenham School

11+ Sample Paper

Subject: **Mathematics**

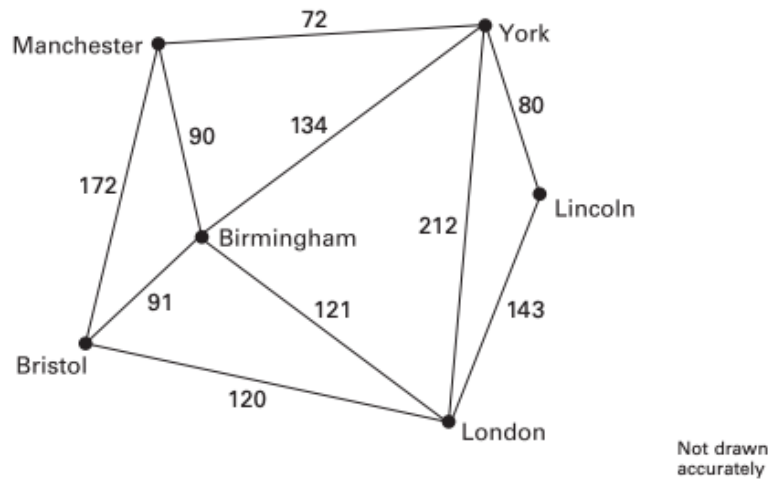
Time allowed: **45** mins

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) 284×46

.....
[2]

b) $142.5 \div 3$

.....
[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) $\dots \times 6 = 420$

b) $\sqrt{25} + \sqrt{36} = \dots\dots$

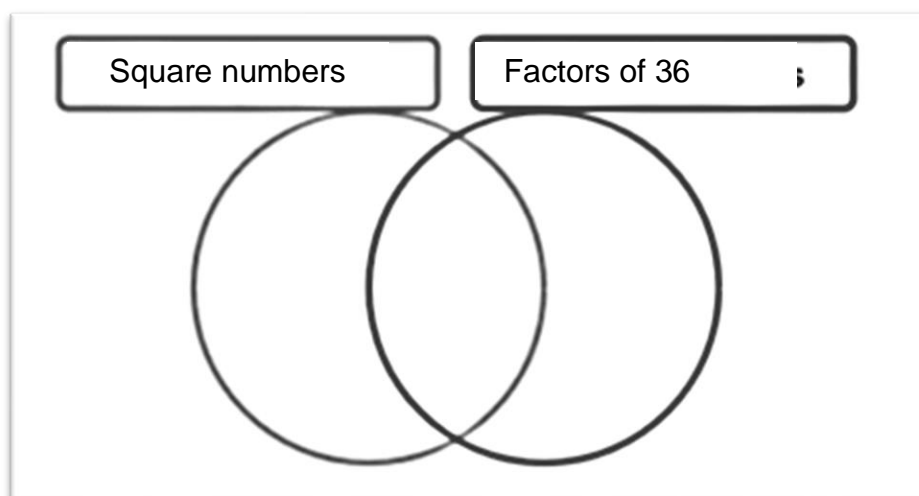
c) $80 \times 0.4 = \dots\dots$

d) $\dots\dots + 15 = 12$

[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]

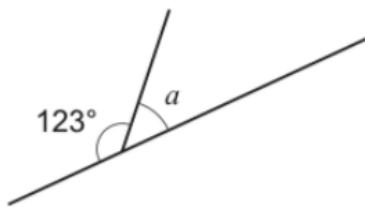
9. Clem has £6.
She spends some money in the shop and gets 50p change.

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

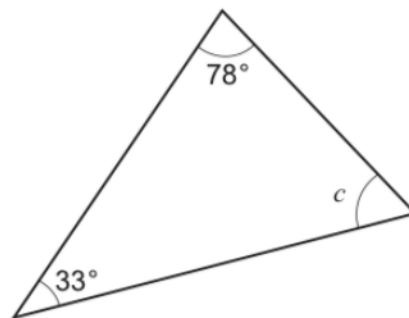
.....

[2]

10. Calculate the size of the missing angles.



$$a = \dots\dots\dots^\circ$$



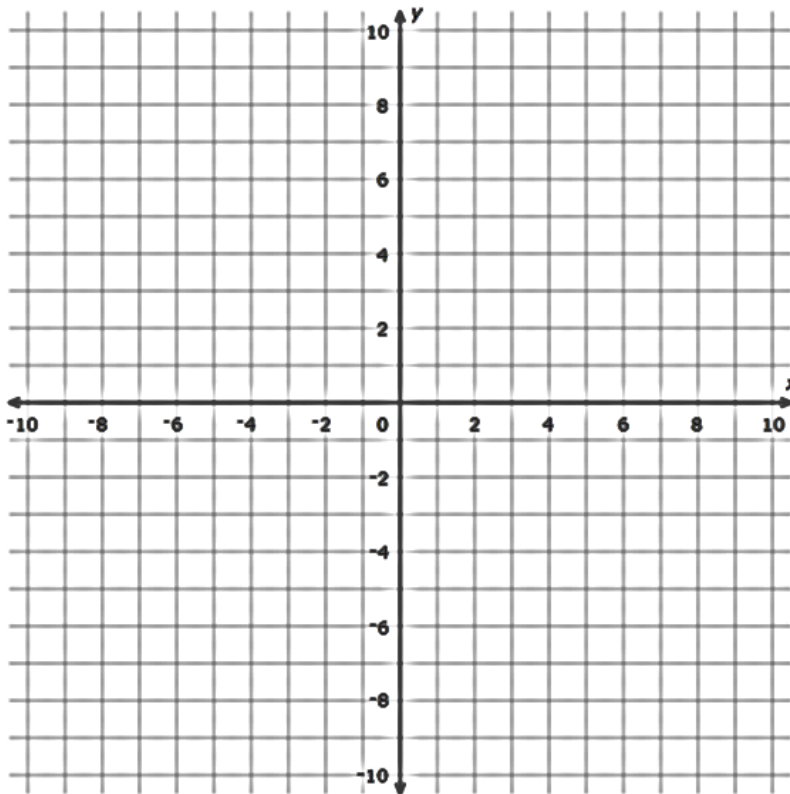
$$c = \dots\dots\dots^\circ$$

[2]

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

11a. Plot these points on the axes below.

[2]



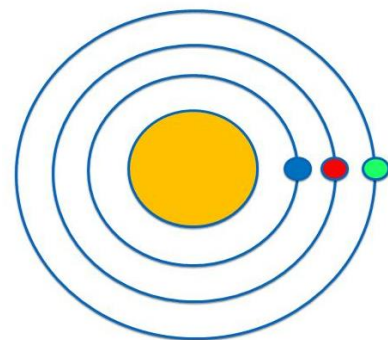
11b. Write down the co-ordinate of the missing vertex of the rectangle.

.....
[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.

Key:  represents 4 fruits

Oranges	
Kiwi fruits	
Bananas	

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) $\frac{1}{2}$ of 1.2 kg or $2 \times 400\text{g}$

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 Mephram 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 of these calculations has the highest answer?

A $1 \times 2 + 3 + 4$

B $1 + 2 \times 3 + 4$

C $1 \times 2 + 3 \times 4$

D $1 + 2 \times 3 \times 4$

E $1 \times 2 \times 3 \times 4$

[1]

21a) Solve the following equation

$$6x = 66$$

$$x = \dots\dots\dots$$

[1]

22b) Solve the following equation to find b.

$$10b - 3 = 27$$

$$b = \dots\dots\dots$$

[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]

Carpet tiles



25 cm by 25 cm

23. Myla wants to carpet her bedroom floor with tiles.
The floor is a rectangle measuring 5 metres by 3 metres.

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

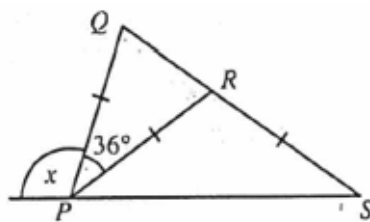
Myla buys the exact number of tiles needed and is given a 20% discount.

How much does she pay?

£

[4]

24. Work out the angle marked x .



$x = \dots\dots\dots^\circ$
[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