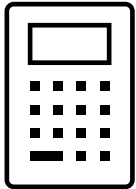


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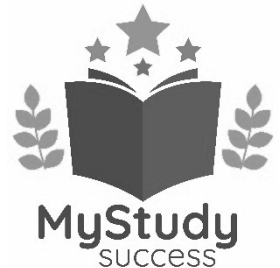
Forename(s):

GCSE Mathematics – Foundation Tier

Paper 2 – Calculator



Practice Set D



Materials

- **Formulae Sheet** (on the next page)
- **Black** ink or ball-point pen
- Pencil
- Eraser
- Protractor
- Compass
- Tracing Paper
- **Calculator allowed**

/40

Instructions

- Time allowed: **45 minutes**.
- The total mark for this paper is **40**.
- Show **all** of your working.
- Draw diagrams in pencil.
- Plot graphs in pencil.
- Diagrams are **not** accurately drawn, unless otherwise indicated.
- Cross through any work you don't want to be marked

Foundation Tier Formulae Sheet

Perimeter, Area and Volume

Where a and b are the lengths of the parallel sides and h is their perpendicular separation:

Area of a trapezium = $\frac{1}{2}(a + b)h$

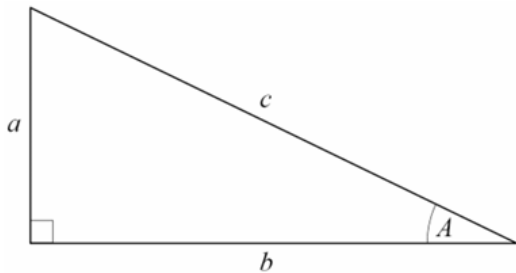
Volume of a prism = area of cross section $\times$ length

Where r is the radius and d is the diameter:

Circumference of a circle = $2\pi r = \pi d$

Area of a circle = πr^2

Pythagoras' Theorem and Trigonometry



In any right-angled triangle where a , b and c are the length of the sides and c is the hypotenuse:

$$a^2 + b^2 = c^2$$

In any right-angled triangle ABC where a , b and c are the length of the sides and c is the hypotenuse:

$$\sin A = \frac{a}{c} \quad \cos A = \frac{b}{c} \quad \tan A = \frac{a}{b}$$

Compound Interest

Where P is the principal amount, r is the interest rate over a given period and n is number of times that the interest is compounded:

$$\text{Total accrued} = P \left(1 + \frac{r}{100} \right)^n$$

Probability

Where $P(A)$ is the probability of outcome A

and $P(B)$ is the probability of outcome B :

$$P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$$

$$P(A \text{ and } B) = P(A \text{ given } B) P(B)$$

- 1 Write the following numbers in order from smallest to largest.

-2 1.2 -2.1 1 -1.2

(Total for question 1 is 1 mark)

- 2 (a) Write down two prime numbers between 30 and 45

_____ and _____
(2)

- (b) Write down an example of an obtuse angle.

_____°
(1)

- (c) Write down the name of a four sided shape that has no lines of symmetry.

(1)

(Total for question 2 is 4 marks)

- 3 Measure the length of this line.
Give your answer in millimetres.



_____mm

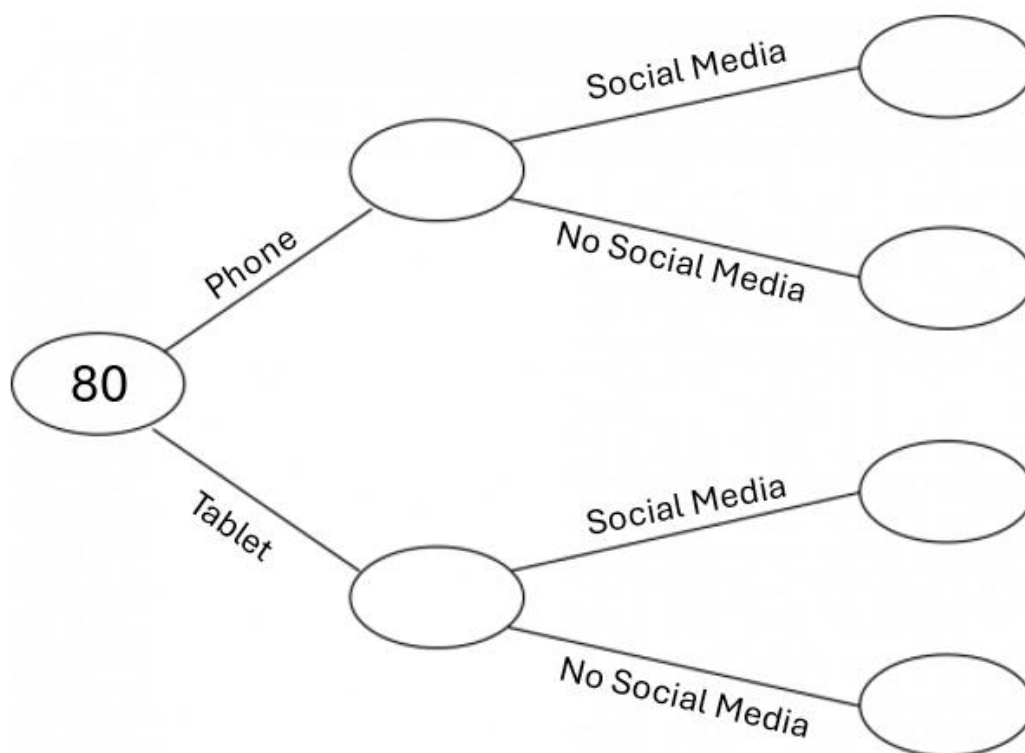
(Total for question 3 is 1 mark)

- 4 80 students were asked if they have a phone or tablet.
There are **no** students who have **both** a phone and a tablet.
The students were also asked if they use social media.

44 students have a phone.

36 of the students who have a phone use social media.

80% of the students use social media.



- (a) Complete the tree diagram.

(4)

- (b) What fraction of the students have a tablet.

(1)

(Total for question 4 is 5 marks)

5 $V = \frac{R}{7} + 9$

(a) Find the value of V when R = 161

V = _____
(2)

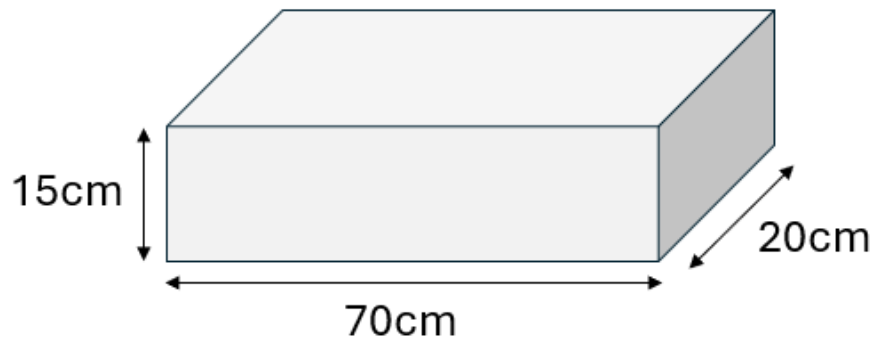
(b) Make R the subject of the formula $V = \frac{R}{7} + 9$

(2)
(Total for question 5 is 4 marks)

6 $\frac{3}{5}$ of a number is 24.
What is the number?

(Total for question 6 is 2 marks)

- 7 Here is a container in the shape of a cuboid.



- (a) Work out the volume of the cuboid.

_____ cm^3

(1)

- (b) The container is filled completely with water.

Benson wants to fill as many 2 litre jugs as possible with the water from the container.

How many jugs can Benson completely fill with water?

_____ jugs

(3)

(Total for question 7 is 4 marks)

8 Nina saves 2p, 5p and 10p coins.

She has 45 10p coins.

She has 6 times as many 2p coins as 10p coins.

She has exactly £10 in total.

Work out the ratio of the total value of **2p** coins : the total value of **5p** coins

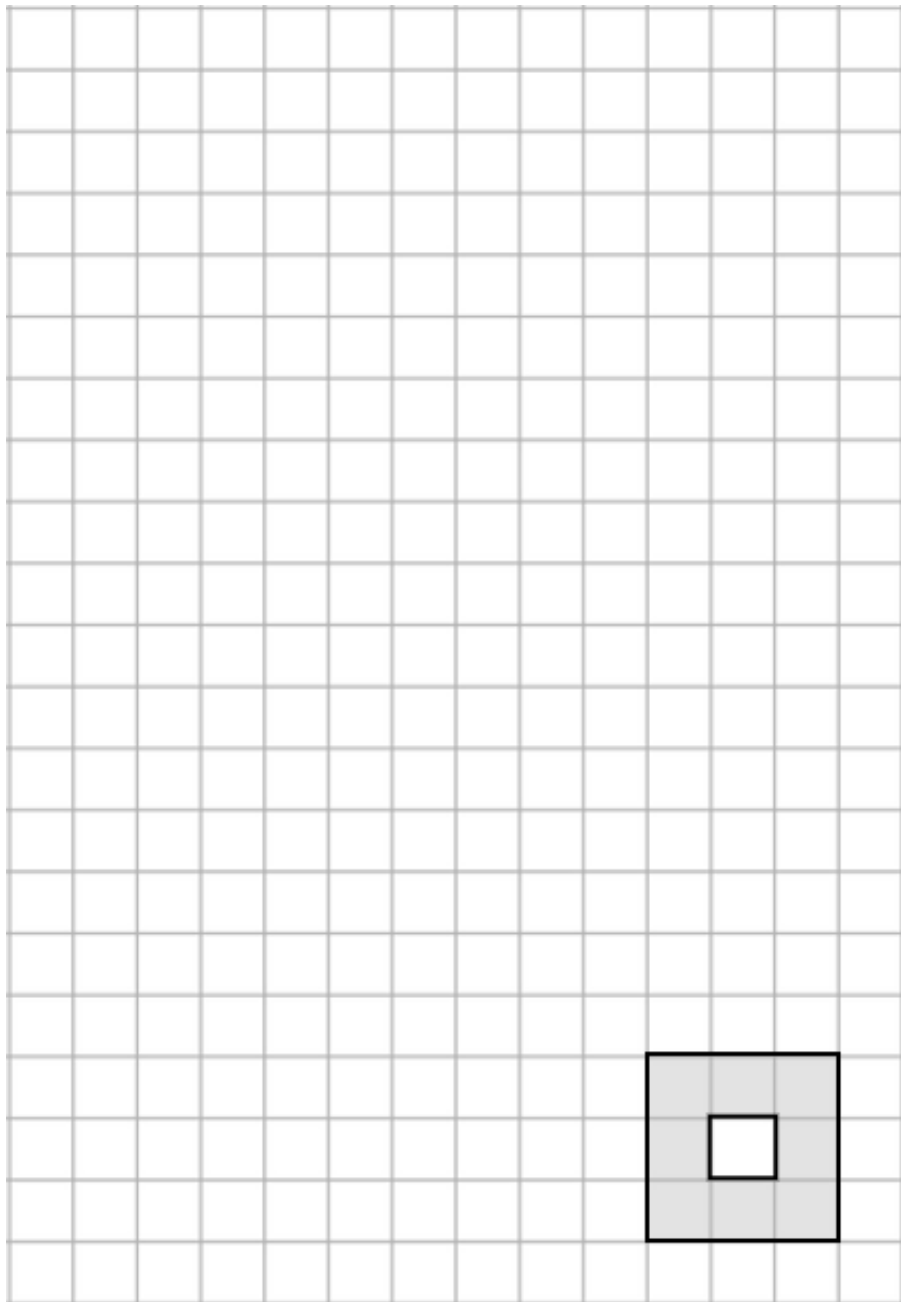
Give your answer in its simplest form.



_____ : _____

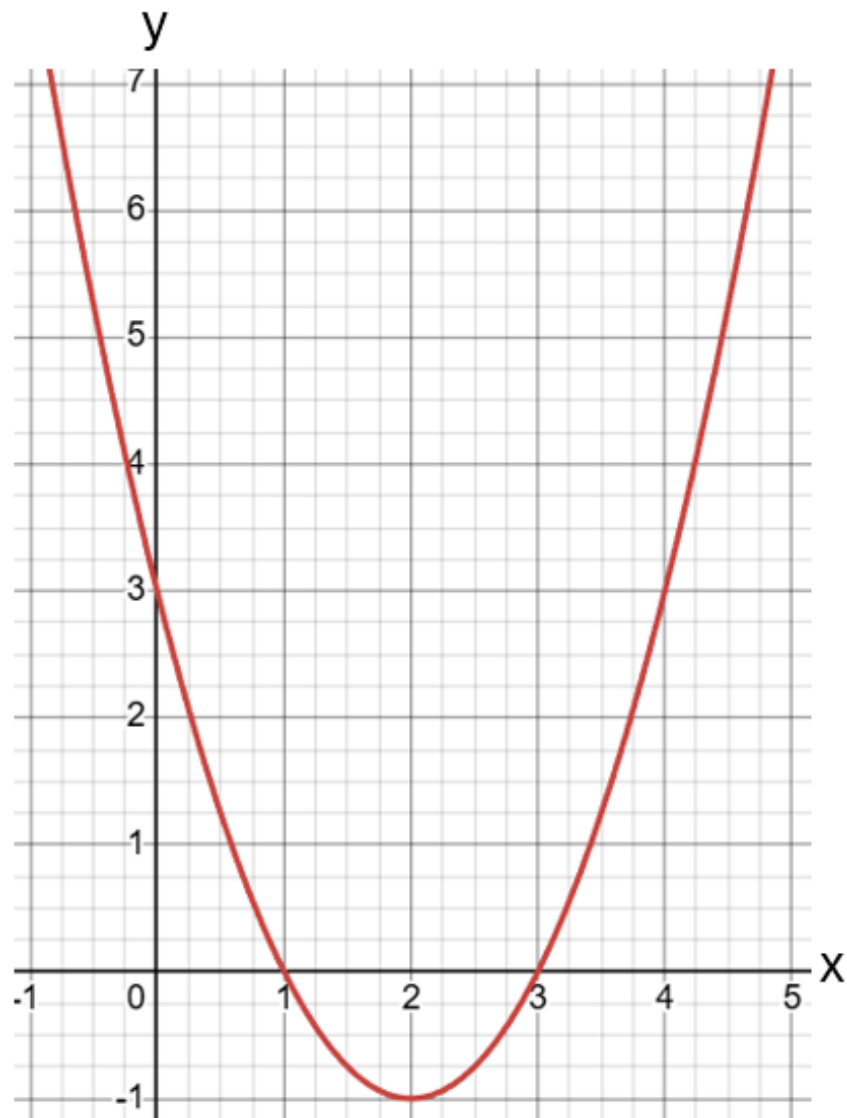
(Total for question 8 is 4 marks)

9 Enlarge this shape by scale factor 3.



(Total for question 9 is 2 marks)

10 Below is the graph of $y = x^2 - 4x + 3$



(a) Write down the turning point of the graph $y = x^2 - 4x + 3$

(_____ , _____)

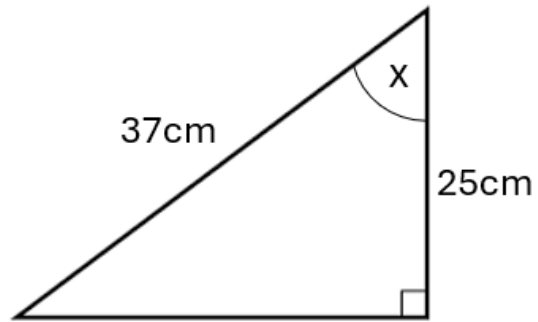
(1)

(b) Use your graph to find the roots of the equation $x^2 - 4x + 3 = 0$

(2)

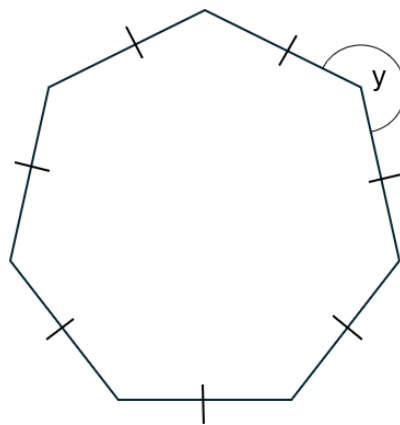
(Total for question 10 is 3 marks)

11 (a) Work out the size of angle x



_____°
(3)

(b) Work out the size of angle y.



_____°
(3)

(Total for question 11 is 6 marks)

12 The table below shows information about the weights of 110 lemons.

Weight (w grams)	Frequency
$50 < w \leq 100$	25
$100 < w \leq 150$	34
$150 < w \leq 200$	22
$200 < w \leq 250$	19
$250 < w \leq 300$	10

(a) Write down the modal class interval.

(1)

(b) Calculate an estimate for the mean weights of the 110 lemons.

Give your answer correct to 3 significant figures.

_____ grams

(3)

(Total for question 12 is 4 marks)

END OF TEST

TOTAL FOR THIS PAPER IS 40 MARKS