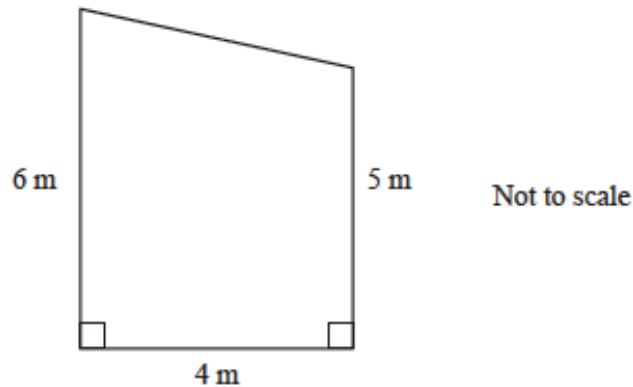


Revision F3 (All topics) A [42]

1.

The diagram shows the side wall of a building.



Calculate the area of the wall.
You **must** show all your working.

(Total 4 marks)

2.

(a) You are given the formula $y = \frac{5+x}{x}$

Rearrange the formula to give x in terms of y .

(3)

(b) Simplify $(3xy^2)^4$.

(2)

(Total 5 marks)

3.

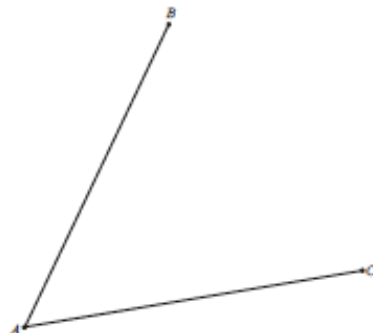
AB and AC represent two walls.

A mast is to be erected that is

equidistant from AB and AC

between 40 m and 70 m from A .

Scale: 1 cm represents 10 m



Show clearly all the possible positions of the mast.

(Total 3 marks)

4.

(a) Factorise $y^2 + 27y$

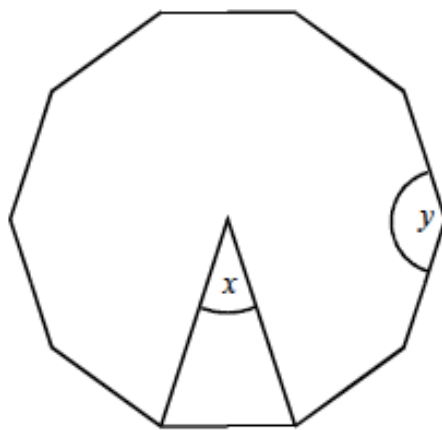
(b) Simplify $(t^3)^2$

(c) Simplify $\frac{w^9}{w^4}$

(Total 3 marks)

5.

The diagram shows a regular decagon.



Not drawn accurately

(a) Work out the angle at the centre of the decagon, marked x on the diagram.

(2)

(b) Work out the size of the interior angle, marked y on the diagram.

(2)

(Total 4 marks)

6. **Non-calculator**

Show that line $3y = 4x - 14$ is perpendicular to line $4y = -3x + 48$.

[4]

7.

Toby invested £7500 for 2 years in a savings account.
He was paid 4% per annum compound interest.

How much money did Toby have in his savings account at the end of 2 years?

(Total 2 marks)

8.

Show that $(\sqrt{50} - \sqrt{2})^2$ is an integer.

(Total 2 marks)

9.

(a) Express $0.\dot{5}\dot{1}$ as a fraction in its simplest form.

(2)

(b) Express $0.4\dot{5}\dot{1}$ as a fraction in its simplest form.

(3)

(Total 5 marks)

10.

(a) The numbers in this calculation are given to 3 significant figures.

Find the least possible value of $\frac{12.3}{15.6 - 7.20}$

You **must** show all your working.

(3)

(b) The maximum safe load of a lift is 1500 kg, to the nearest 50 kg.

The lift is loaded with boxes weighing 141 kg and 150 kg, both weights given to the nearest kilogram.

Can the lift safely carry 3 boxes weighing 141 kg each and 7 boxes weighing 150 kg each?

You **must** show all your working.

(3)

(Total 6 marks)

11.

Jane records the times taken by 30 pupils to complete a number puzzle.

Time, t (minutes)	Number of pupils
$2 < t \leq 4$	3
$4 < t \leq 6$	6
$6 < t \leq 8$	7
$8 < t \leq 10$	8
$10 < t \leq 12$	5
$12 < t \leq 14$	1

Calculate an estimate of the mean time taken to complete the puzzle.

(Total 4 marks)