



EXAM PAPERS PRACTICE

GCSE Edexcel Math 1MA1 Solving Linear Equation

Answers

*"We will help you to
achieve A Star "*



Answer 1

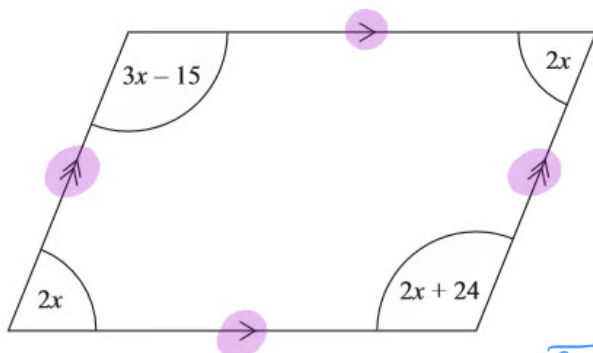


Diagram NOT accurately drawn

The diagram shows a parallelogram.
The sizes of the angles, in degrees, are

- $2x$
- $3x - 15$
- $2x$
- $2x + 24$

Work out the value of x .

$$\textcircled{1} \quad 3x - 15 + 2x + 2x + 24 + 2x = 360$$

$$\begin{aligned} 9x + 9 &= 360 \\ -9 \quad -9 & \\ \hline 9x &= 351 \\ \frac{9x}{9} &= \frac{351}{9} \end{aligned}$$

$$\underline{\underline{x = 39^\circ}}$$

① QUADRILATERAL
ANGLES ADD TO 360°

② PARALLELOGRAM
OPPOSITE ANGLES ARE EQUAL.

$$\begin{array}{r} 39 \\ 9 \overline{) 351} \end{array}$$

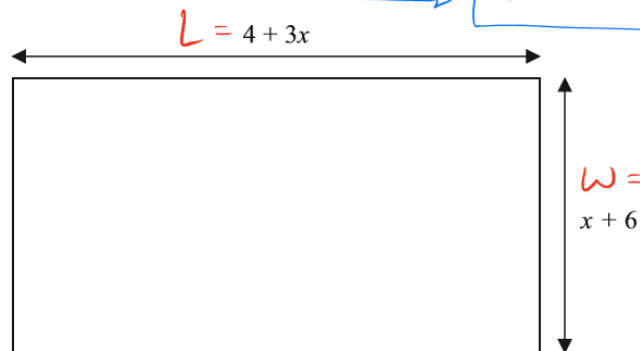
$$x = \underline{\underline{39}}$$

$$\begin{aligned} \textcircled{2} \quad 3x - 15 &= 2x + 24 \\ -2x \quad -2x & \\ \hline x - 15 &= 24 \\ +15 \quad +15 & \\ \hline x &= 39 \\ \underline{\underline{x = 39}} & \end{aligned}$$



Answer 2

The diagram shows a garden in the shape of a rectangle.



$$\text{PERIMETER} = 2(L+w)$$

Diagram NOT accurately drawn

All measurements are in metres.
The perimeter of the garden is 32 metres.

Work out the value of x

$$\text{PERIMETER} = 32$$

$$2(L+w) = 32$$

$$2(4+3x+x+6) = 32$$

$$2(4x+10) = 32$$

$$8x + 20 = 32$$

$$\frac{8x}{8} = \frac{12}{8}$$

$$x = \frac{12}{8}$$

$$x = \frac{12}{8}$$

$$x = \frac{2 \times 6}{2 \times 4}$$

$$x = \frac{2 \times 3}{2 \times 2}$$

$$x = \frac{3}{2}$$

$$x = 1.5$$

GROSS

LET

D



Answer 3

(b) Solve $5 \times \left(\frac{2-y}{5}\right) = 1 \times 5$

CROF

$$\cancel{5} \times \frac{(2-y)}{\cancel{5}} = 1 \times 5$$

LET

$$\begin{array}{ccc} 2-y & = & 5 \\ -2 & & -2 \end{array}$$

$$-y = 3$$

$$\underline{y = -3}$$



Answer 4

(b) Solve $7(x+2) = 7$

GRAB GRAB LET

GRAB

$$7x + 14 = 7$$

-14 -14

LET

$$\frac{7x}{7} = \frac{-7}{7}$$

$$\underline{\underline{x = -1}}$$



Answer 5

Simplify $4y + 2x - 3 + 3x + 8$

$$= \underline{\underline{5x + 4y + 5}}$$



Answer 6

ABC is a triangle.

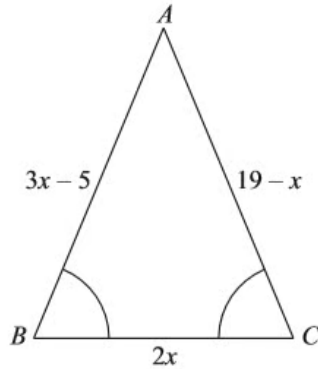


Diagram **NOT** accurately drawn

ISOSCELES
TRIANGLES

Angle $ABC =$ angle BCA .

The length of side AB is $(3x - 5)$ cm.

The length of side AC is $(19 - x)$ cm.

The length of side BC is $2x$ cm.

Work out the perimeter of the triangle.

Give your answer as a number of centimetres.

$AB = AC$

Find x ↓

$$3x - 5 = 19 - x$$

$$4x - 5 = 19$$

$$\frac{4x}{4} = \frac{24}{4}$$

$$\underline{\underline{x = 6}}$$

$$\begin{aligned} \text{PERIMETER} &= 3x - 5 + 19 - x + 2x \\ &= 3 \times 6 - 5 + 19 - 6 + 2 \times 6 \\ &= 18 - 5 + 19 - 6 + 12 \\ &= 13 + 13 + 12 = \end{aligned}$$

38 cm



Answer 7

(b) Solve $\frac{h+7}{3} + \frac{2h-1}{2} = \frac{5}{6}$

CR0F $\frac{(h+7) \times 2}{3 \times 2} + \frac{(2h-1) \times 3}{2 \times 3} = \frac{5 \times 6}{6}$

$2(h+7) + 3(2h-1) = 5$

CR0B $2h + 14 + 6h - 3 = 5$

LET $8h + 11 = 5$
 $-11 \quad -11$

$\frac{8h}{8} = \frac{-6}{8}$

D $h = \frac{-6}{8} = \frac{-3}{4} = \underline{\underline{-0.75}}$



Answer 8

Solve $\frac{7-3f}{4} = 2$

GROF ~~4x~~ $\frac{7-3f}{4} = 2 \times 4$

GROFGROBLET
FIND ANSWER

LET $\frac{7-3f}{-7} = \frac{8}{-7}$

D $\frac{-3f}{-3} = \frac{1}{-3} \rightarrow \underline{\underline{f = -\frac{1}{3}}}$



Answer 9

$ABCD$ is a trapezium.

$STUV$ is a rectangle.

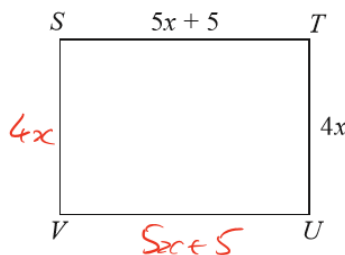
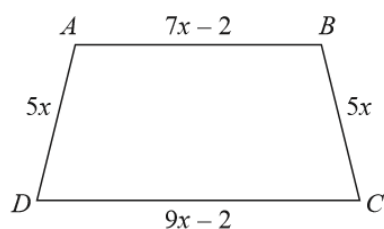


Diagram NOT accurately drawn

All measurements are in centimetres.

The two shapes have the same perimeter.

Work out the length of ST .

$$\begin{array}{l} \text{PERIMETER} \\ \text{OF} \\ \text{TRAPEZIUM} \end{array} = \begin{array}{l} \text{PERIMETER} \\ \text{OF} \\ \text{RECTANGLE} \end{array}$$

$$7x - 2 + 5x + 9x - 2 + 5x = 5x + 5 + 4x + 5x + 5 + 4x$$

$$26x - 4 = 18x + 10$$

$$26x = 18x + 14$$

$$\frac{8x}{8} = \frac{14}{8}$$

$$x = \frac{14}{8} = \frac{7}{4}$$

$$ST = 5x + 5$$

$$= 5 \times \frac{7}{4} + 5$$

$$= \frac{35}{4} + \frac{20}{4} = \frac{55}{4} \text{ cm} = 13\frac{3}{4} \text{ cm}$$



Answer 10

Solve $\frac{11-w}{4} = (1+w) \times 4$

CR0F: $11-w = 4(1+w)$

CR0B: $11-w = 4 + 4w$
 $+w \qquad +w$

LET: $11 = 4 + 5w$
 $-4 \qquad -4$

D: $\frac{7}{5} = \frac{5w}{5}$

$\frac{7}{5} = w$

CR0F CR0B LET
FIND ANSWER



Answer 11

Solve $\frac{4x-1}{5} + \frac{x+4}{2} = 3$

"GROB GROB LET"

$$2 \times \frac{(4x-1)}{5} + 5 \times \frac{(x+4)}{2} = 3 \times 10$$

GROB $2(4x-1) + 5(x+4) = 30$

GROB $8x - 2 + 5x + 20 = 30$

LET $13x + 18 = 30$
 $-18 \quad -18$

$$\frac{13x}{13} = \frac{12}{13}$$

D

$$\underline{x = \frac{12}{13}}$$



Answer 12

The diagram shows the plan of a floor.

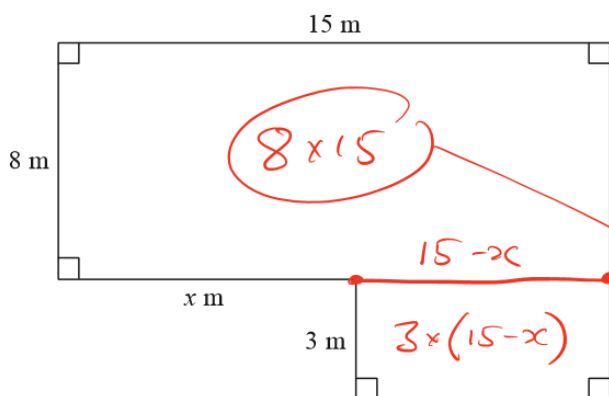


Diagram **NOT** accurately drawn

The area of the floor is 138 m².

Work out the value of x .

Handwritten calculations:
 8×15
 $2 \times 2 \times 2 \times 15$
 $2 \times 2 \times 30$
 2×60
120

AREA = 138

$120 + 3(15 - x) = 138$

GROB GROB LET
FIND ANSWER

GROB

$120 + 45 - 3x = 138$

LET

$165 - 3x = 138$
 $+ 3x \quad + 3x$

$165 = 138 + 3x$
 $-138 \quad -138$

$\frac{27}{3} = \frac{3x}{3}$

9 = x

D

Handwritten calculations:
 $\frac{15}{3} = 5$
 $\frac{45}{3} = 15$
 $165 - 138 = 27$
27



Answer 13

Solve $5 \times \frac{15-x}{5} = 3x + 11 \times 5$

GR0F: $15 - x = 5(3x + 11)$

GR0B: $15 - x = 15x + 55$
 $+x \quad +x$

LET: $15 - 55 = 16x + 55 - 55$

D: $\frac{-40}{16} = \frac{16x}{16}$

$-2.5 = x$

ANSWER!

GR0F GR0B LET
FIND ANSWER!



Answer 14

Solve $\frac{4(8x-2)}{3x} = 10$

"GROF GROB LET"

FIND ANSWER"

GROF

$$\cancel{3x} \times \frac{4(8x-2)}{\cancel{3x}} = 10 \times 3x$$

GROB

$$4(8x-2) = 30x$$

LET

$$32x - 8 = 30x$$

$$2x - 8 = 0$$

$$2x = 8$$

$$\frac{2x}{2} = \frac{8}{2}$$

$$\underline{\underline{x = 4}}$$



Answer 15

Solve $\frac{x+1}{3} + \frac{2x+5}{4} = 2$

CR0F CR0B LET

CR0F: $\frac{4(x+1)}{3} + \frac{3(2x+5)}{4} = 2 \times 12$ FIND ANSWER!

$4(x+1) + 3(2x+5) = 24$

CR0B: $4x + 4 + 6x + 15 = 24$

LET: $10x + 19 = 24$
 $\quad \quad \quad -19 \quad \quad -19$

$\frac{10x}{10} = \frac{5}{10}$

D:

$x = \frac{1}{2}$ ANSWER!