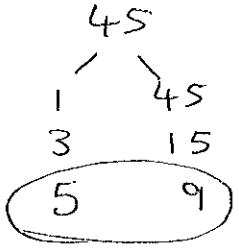
1. (i) Factorise $x^2 - 4x - 45$



$(x - 9)(x + 5)$

.....

(ii) Solve the equation

$x^2 - 4x - 45 = 0$

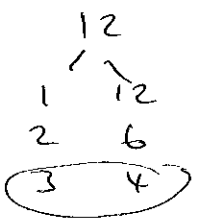
$(x - 9)(x + 5) = 0$

$x = 9$ and $x = -5$

.....

(Total 3 marks)

2. (i) Factorise $x^2 - 7x + 12$



$(x - 3)(x - 4)$

.....

(ii) Solve the equation

$x^2 - 7x + 12 = 0$

$(x - 3)(x - 4) = 0$

$x = 3$ and $x = 4$

.....

(Total 3 marks)

3. (a) Factorise $x^2 - 3x - 18$

$(x + 3)(x - 6)$

.....

(2)

(b) Solve $x^2 - 3x - 18 = 0$

$x =$ -3

or $x =$ 6

(1)

(Total 3 marks)

4. (a) Factorise $x^2 + 6x + 8$

$(x + 2)(x + 4)$

.....

(2)

(b) Solve $x^2 + 6x + 8 = 0$

$x =$ -2

or $x =$ -4

(1)

(Total 3 marks)

5. (a) Factorise $x^2 - x - 56$

$(x + 7)(x - 8)$

.....

(2)

(b) Solve $x^2 - x - 56 = 0$

$x =$ -7

or $x =$ 8

(1)

(Total 3 marks)

6. (i) Factorise $x^2 + 9x + 20$

$(x + 5)(x + 4)$

.....

(ii) Solve the equation

$x^2 + 9x + 20 = 0$

-5 and -4

(Total 3 marks)

7. (i) Factorise $x^2 - 12x + 35$

$(x - 5)(x - 7)$

.....

(ii) Solve the equation

$$x^2 - 12x + 35 = 0$$

$x = 5$ and $x = 7$

.....

(Total 3 marks)

8. (i) Factorise $x^2 - x - 72$

$(x + 8)(x - 9)$

.....

(ii) Solve the equation

$$x^2 - x - 72 = 0$$

$x = -8$ and $x = 9$

.....

(Total 3 marks)

9. (a) Factorise $x^2 - 15x + 56$

$(x - 8)(x - 7)$

.....

(2)

(b) Solve $x^2 - 15x + 56 = 0$

$x =$ 8

or $x =$ 7

(1)

(Total 3 marks)

10. (a) Factorise $x^2 + 9x + 18$

$(x + 3)(x + 6)$

.....

(2)

(b) Solve $x^2 + 9x + 18 = 0$

$x =$ -3

or $x =$ -6

(1)

(Total 3 marks)

11. (a) Factorise $x^2 - 2x - 48$

$(x + 6)(x - 8)$

.....

(2)

(b) Solve $x^2 - 2x - 48 = 0$

$x =$ -6

or $x =$ 8

(1)

(Total 3 marks)

12. (i) Factorise $x^2 + 10x + 24$

$(x + 4)(x + 6)$

.....

(ii) Solve the equation

$x^2 + 10x + 24 = 0$

$x = -4$

$x = -6$

.....

(Total 3 marks)

13.

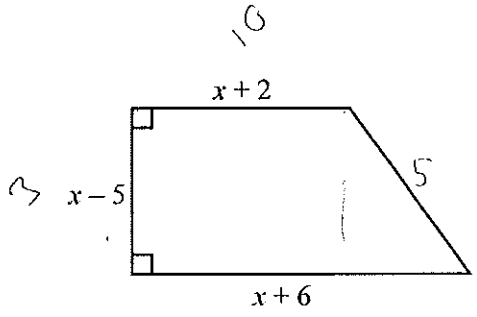


Diagram **NOT** accurately drawn

The diagram shows a trapezium.
The lengths of three of the sides of the trapezium are $x - 5$, $x + 2$ and $x + 6$.
All measurements are given in centimetres.

The area of the trapezium is 36 cm^2.

(a) Show that $x^2 - x - 56 = 0$

$$\left(\frac{x+2+x+6}{2}\right)(x-5) = 36$$

$$\left(\frac{2x+8}{2}\right)(x-5) = 36$$

$$(x+4)(x-5) = 36$$

(4)

(b) (i) Solve the equation $x^2 - x - 56 = 0$

$$x^2 - 5x + 4x - 20 = 36$$

$$x^2 - x - 56 = 0$$

$$(x-8)(x+7) = 0$$

$x = 8$ $x = -7$

.....

X

(ii) Hence find the length of the shortest side of the trapezium.

$\therefore x = 8$

$8 - 5$

3 ..... cm

(4)

(Total 8 marks)