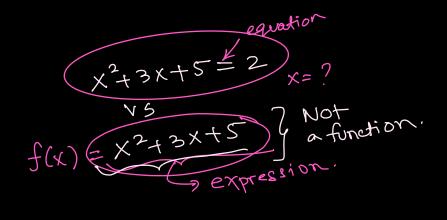
QUADRATICS

Function
$$f(x) = x+3$$

$$f(2) = 2+3$$

$$f(5) = 5+3$$





Quadratic expression.

Linear Expressions: mx+bQuadratic II : ax^2+bx+c Quadratic II : ax^2+bx+c Quadratic II : ax^2+bx+c Quadratic II : ax^2+bx+c Factorised form (x+m)(x-m) $a(x-b)^2+c$ (x+m)(x-m) (x+m)(x-m)

P(X+9)2+1 2x2+3x+12 in the form Express 2(27442+6) completing tre square 2 (X+2xxx2+2+2+2+2+6) $(a+b)^2 = a^2 + 2ab + b^2$ x2+2.x.3+32 $(x+2)^{2}-2^{2}+6$ $2((x+2)^{2}+2]$ 2 (x+2)2+4 0- x2 + bx + C 2x+8x+12 Divide every term by a : and twen multiply everything by a : Step 1: 2(22+42+6) Half 4-9 2 Add 22/ Subtract 2° Step 2:

Step 2: $2 \left(\frac{2}{x^2} + \frac{$

$$3x^{2}-18x+30 \rightarrow \text{Complete square}$$
 $3(x^{2}-6x+10) \rightarrow \text{step } 1$
 $3(x^{2}-6x+3^{2}-3^{2}+10) \rightarrow \text{step } 2$
 $3((x-3)^{2}+3)$
 $3((x-3)^{2}+3)$

- 2) Add middle ferm's half's square and subtract if again.
- 3) form ()²
 by looking at the ferms.

$$2x^{2} - 10x + 5 \rightarrow \text{ Completing tre square}$$

$$2(x^{2} - 5x + \frac{5}{2})$$

$$2(x^{2} - 5x + (\frac{5}{2})^{2} - (\frac{5}{2})^{2} + \frac{5}{2})$$

$$2((x - \frac{5}{2})^{2} - (\frac{5}{2})^{2} + \frac{5}{2})$$

$$-2((x - \frac{5}{2})^{2} - (\frac{5}{2})^{2} - \frac{15}{2})$$

Complete the squares for the following:

$$()$$
 $\chi^{2}-6x+6$

$$(1)$$
 $2x^2-16x-4$

①
$$2[x-8x-2]$$
② $2[(x^2-8x+4^2-4^2-2)]$
② $2[(x^2-8x+4^2-4^2-2)]$
 $= 2[(x-4)^2-16-2]$
 $= 2[(x-4)^2-36$

Factorising Quadratic Expression.

$$a^{2}-b^{2} = (a+b)(a-b)$$
 $a^{2}-b^{2} = (a+b)(a-b)$
 $a^{2}-b^{2} = (a+b)(a-b)$

factor:
$$\chi^2 - 5$$

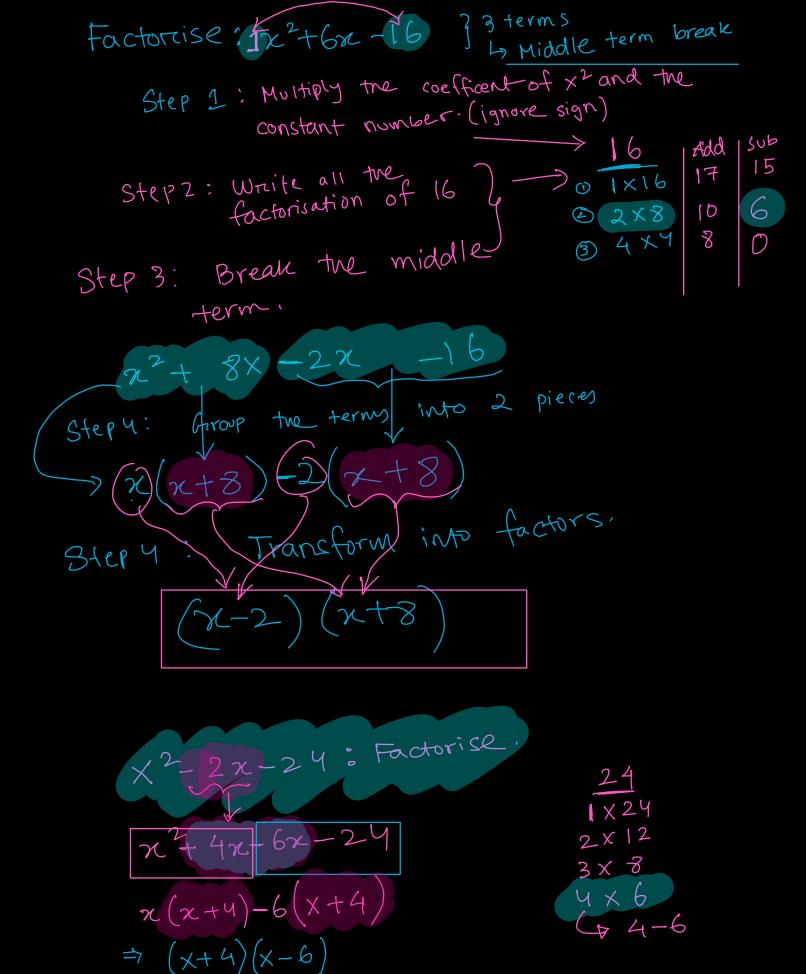
$$\chi^2 - (\sqrt{5})^2 = 5$$

$$(\sqrt{5})^2 = 5$$

$$(\sqrt{5})^2 = 5$$

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$$(\sqrt{5})^2 = 5$$



- 1 x 30 = 3 G
- 2 X 15
- 3×10
- 5 X 6

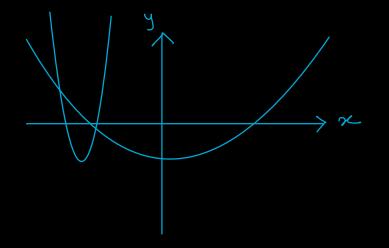
$$3) 2x(x+15)-1(x+15)$$

$$(4) (2x-1)(x+15)$$

Sketching Quadratic functions.

(2) Completing the square form.

$$y = a(x-b)^2 + C$$



a)
$$4x^2 - 32x + 40$$
 } (omplete form.

b) Solve
$$v^2 - 5v - 14 = 0$$

$$\frac{w^2 - 10}{w + 2} + w - 4 = w - 3$$