

Factor:

1) $x^2 + 3x - 10$

$$\begin{aligned} -2 + 5 &= 3 \\ -2 \times 5 &= -10 \end{aligned}$$

$$= (x-2)(x+5)$$

2) $x^2 - 4x + 3$

$$\begin{aligned} -1 + 4 &= -4 \\ -1 \times 4 &= -4 \end{aligned}$$

$$= (x-1)(x+4)$$

3) $x^2 - 4$

Difference of Squares

$$= (x-2)(x+2)$$

4) $3x^2 + 8x + 4$

$$\begin{aligned} 2 + 6 &= 8 \\ 2 \times 6 &= 12 \end{aligned}$$

$$2 \times 6 = (3)(4) = 12$$

$$= 3x^2 + 2x + 6x + 4$$

$$= x(3x+2) + 2(3x+2)$$

$$= (x+2)(3x+2)$$

5) $2x^2 - 7x + 6$

$$-3 + 4 = -7$$

$$-3 \times 4 = (2)(6) = 12$$

$$= 2x^2 - 3x - 4x + 6$$

$$= 2x^2 - 3x - (4x - 6)$$

$$= x(2x-3) - 2(2x-3)$$

$$= (x-2)(2x-3)$$