

حل التمرين 8

للتذكير

$$a^2 + 2ab + b^2 = (a + b)^2, \quad a^2 - 2ab + b^2 = (a - b)^2,$$

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

نعمل ما يلي :

$$x^2 + 6x + 9 = (x + 3)^2 = (x + 3)(x + 3)$$

$$49 - 42x + 9x^2 = 7^2 - 2(7)(3x) + (3x)^2 = (7 - 3x)^2$$

$$x^2 - 49 = x^2 - 7^2 = (x - 7)(x + 7).$$

$$(x + 3)^2 - 36 = (x + 3)^2 - 6^2 = (x + 3 - 6)(x + 3 + 6)$$

$$(x + 3)^2 - 36 = (x - 3)(x + 9) \quad \text{أي أن :}$$

$$(3x - 2)^2 - (2x + 1)^2 = [(3x - 2) - (2x + 1)][(3x - 2) + (2x + 1)]$$

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

$$= (x - 3)(5x - 1)$$

$$-7x^2 + 14x - 7 = -7(x^2 - 2x + 1)$$

$$= -7(x - 1)^2$$

$$= -7(x - 1)(x - 1)$$

$$\frac{x^2}{5} - 5 = \frac{x^2}{5} - \frac{25}{5} = \frac{1}{5}(x^2 - 25)$$

$$\frac{x^2}{5} - 5 = \frac{1}{5}(x - 5)(x + 5) \quad \text{أي أن :}$$

$$48x^2 - 27 = 3(16x^2) - 3(9)$$

$$= 3[(4x)^2 - 3^2]$$

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