

$$\begin{aligned} A &= (8 - 5x)^2 \\ &= 8^2 - 2 \times 40x + (5x)^2 \\ &= 64 - 80x + 25x^2 \end{aligned}$$

$$\begin{aligned} B &= [4x(3x-1)] - [(3x-7)(5-3x)] \\ &= [12x^2 - 4x] - [15x - 9x^2 - 35 + 21x] \\ &= [12x^2 - 4x] - [-9x^2 + 36x - 35] \\ &= 12x^2 - 4x + 9x^2 - 36x + 35 \\ &= 21x^2 - 40x + 35 \end{aligned}$$

$$\begin{aligned} C &= (x-3)^2 + x(x+5) \\ &= [(x-3)^2] + [x(x+5)] \\ &= [x^2 + 3^2 - 2 \times 3 \times x] + [x^2 + 5x] \\ &= x^2 + 9 - 6x + x^2 + 5x \\ &= 2x^2 - x + 9 \end{aligned}$$

$$\begin{aligned} D &= (x+4)^2 - (5x-4) \\ &= [(x+4)^2] - (5x-4) \\ &= [x^2 + 4^2 + 2 \times x \times 4] - (5x-4) \\ &= [x^2 + 16 + 8x] - (5x-4) \\ &= x^2 + 16 + 8x - 5x + 4 \\ &= x^2 + 3x + 20 \end{aligned}$$

تصحيح التمرين الثاني

أ - أحسب و أبسط

$$\begin{aligned} F &= (x-4)^2 - (x-2)(x-8) \\ &= [(x-4)^2] - [(x-2)(x-8)]. \\ &= [x^2 + 4^2 - 2 \times x \times 4] - [x^2 - 8x - 2x + 16] \\ &= [x^2 + 16 - 8x] - [x^2 - 10x + 16] \\ &= x^2 + 16 - 8x - x^2 + 10x - 16 \\ &= 2x \end{aligned}$$

ب - طريقة حساب التعبير $9996^2 - 9998 \times 9992$ حسابه

$$\begin{aligned} 9996^2 - 9998 \times 9992 &= (10000 - 4)^2 - (10000 - 2)(10000 - 8) = F(10000) \\ \text{donc } 9996^2 - 9998 \times 9992 &= 2 \times 10000 = 20000 \end{aligned}$$

تصحيح التمرين الثالث

$$\begin{aligned} E &= (2x-1)(x+8) + (x+8)^2 \quad (2) \\ E &= (2x-1)(x+8) + (x+8)(x+8) \\ E &= (x+8)[(2x-1) + (x+8)] \\ E &= (x+8)[2x-1+x+8] \\ E &= (x+8)[3x+7] \end{aligned}$$

$$\begin{aligned} E &= (2x-1)(x+8) + (x+8)^2 \quad (1) \\ &= 2x^2 + 16x - x - 8 + x^2 + 2x \times 8 + 8^2 \\ &= 2x^2 + 15x - 8 + x^2 + 16x + 64 \\ &= 2x^2 + x^2 + 15x + 16x + 56 \\ &= 3x^2 + 31x + 56 \end{aligned}$$

تصحيح التمرين الرابع

(2) أعمل التعبير F

$$\begin{aligned} 2. F &= 9x^2 - 16 - (2x-3)(3x+4) \\ &= (3x-4)(3x+4) - (2x-3)(3x+4) \\ &= (3x+4)[(3x-4) - (2x-3)] \\ &= (3x+4)[3x-4-2x+3] \\ &= (3x+4)[x-1] \\ &= (3x+4)(x-1) \end{aligned}$$

(1) أنشر وأبسط التعبير F

$$\begin{aligned} 1. F &= 9x^2 - 16 - (2x-3)(3x+4) \\ &= 9x^2 - 16 - [(2x-3)(3x+4)] \\ &= 9x^2 - 16 - [2x \times 3x + 2x \times 4 - 3 \times 3x - 3 \times 4] \\ &= 9x^2 - 16 - [6x^2 + 8x - 9x - 12] \\ &= 9x^2 - 16 - [6x^2 - x - 12] \\ &= 9x^2 - 16 - 6x^2 + x + 12 \\ &= 3x^2 + x - 4 \end{aligned}$$