

| السنّة الثانیة ثانوي إحصائي                                                                                                     | الحساب الحرفي<br>حلّول مقترحة                                                                                                                     | تمارين مقترحة                                                                                                                        |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| <b>تمرین 1 : لتبسط :</b>                                                                                                        |                                                                                                                                                   |                                                                                                                                      |
| $A = 2x + 5 + 8x + 11$<br>$A = 2x + 8x + 5 + 11$<br>$A = 10x + 16$                                                              | $B = 7 - 5x - 3x^2 + x - 8 + 7x^2$<br>$B = 7 - 8 - 5x + x - 3x^2 + 7x^2$<br>$B = -1 - 4x + 4x^2$                                                  | $C = ab + 2a - 7 + a - 5ab$<br>$C = 2a + a + ab - 5ab - 7$<br>$C = 3a - 4ab - 7$                                                     |
| 🌿 أثناء التبسيط نجمع الحدود المتشابهة                                                                                           |                                                                                                                                                   |                                                                                                                                      |
| <b>تمرین 2 : لننشر و نبسط :</b>                                                                                                 |                                                                                                                                                   |                                                                                                                                      |
| $A = 2(x - 8) + 7$<br>$A = 2x - 16 + 7$<br>$A = 2x - 9$                                                                         | $B = -6(1 - x) - (10 - x)$<br>$B = -6 + 6x - 10 + x$<br>$B = 7x - 16$                                                                             | $C = 2(1 - x^2) + x(2x + 3)$<br>$C = 2 - 2x^2 + 2x^2 + 3x$<br>$C = 2 + 3x$                                                           |
| $D = (3x + 4)(x - 1)$<br>$D = 3x^2 - 3x + 4x - 4$<br>$D = 3x^2 + x - 4$                                                         | $E = (x - 2)(2x - 5) - 7(-10 + 4)$<br>$E = 2x^2 - 5x - 4x + 10 + 70 - 28$<br>$E = 2x^2 - 9x + 52$                                                 | $F = (x + 3)^2$<br>$F = x^2 + 2 \times x \times 3 + 3^2$<br>$F = x^2 + 6x + 9$                                                       |
| $G = (2y - 5)^2$<br>$G = (2y)^2 - 2 \times 2y \times 5 + 5^2$<br>$G = 4y^2 - 20y + 25$                                          | $H = (8x - 7y)(8x + 7y)$<br>$H = (8x)^2 - (7y)^2$<br>$H = 64x^2 - 49y^2$                                                                          |                                                                                                                                      |
| 🌿 نذكر بالتطابقات الهامة : $(a + b)(a - b) = a^2 - b^2$ , $(a - b)^2 = a^2 - 2ab + b^2$ , $(a + b)^2 = a^2 + 2ab + b^2$         |                                                                                                                                                   |                                                                                                                                      |
| <b>تمرین 3 : لنعمل :</b>                                                                                                        |                                                                                                                                                   |                                                                                                                                      |
| $A = ab + 5b$<br>$A = b(a + 5)$                                                                                                 | $B = 12x + 18$<br>$B = 6(2x + 3)$                                                                                                                 | $C = 5x - x^2$<br>$C = x(5 - x)$                                                                                                     |
| $D = x + 5x^2 + 11x^3$<br>$D = x(1 + 5x + 11x^2)$                                                                               | $F = 5(x + 1) + (x + 1)^2$<br>$F = (x + 1)[5 + (x + 1)]$<br>$F = (x + 1)(5 + x + 1)$<br>$F = (x + 1)(x + 6)$                                      | $E = (x - 3)(x + 7) - (5 - x)(x - 3)$<br>$E = (x - 3)[(x + 7) - (5 - x)]$<br>$E = (x - 3)(x + 7 - 5 + x)$<br>$E = (x - 3)(2x + 2)$   |
| $J = 100x^2 - 121$<br>$J = (10x)^2 - 11^2$<br>$J = (10x + 11)(10x - 11)$                                                        | $I = (2x - 3)^2 - (x + 1)^2$<br>$I = [(2x - 3) + (x + 1)][(2x - 3) - (x + 1)]$<br>$I = (2x - 3 + x + 1)(2x - 3 - x - 1)$<br>$I = (3x - 2)(x - 4)$ | $H = x^2 - \frac{9}{64}$<br>$H = x^2 - \left(\frac{3}{8}\right)^2$<br>$H = \left(x + \frac{3}{8}\right)\left(x - \frac{3}{8}\right)$ |
| 🌿 في كثير من الأحيان نعمل باستعمال التطابقة $a^2 - b^2 = (a + b)(a - b)$ مثل $I$ و $J$ و $K$ و $H$                              |                                                                                                                                                   |                                                                                                                                      |
| <b>تمرین 4 :</b>                                                                                                                |                                                                                                                                                   |                                                                                                                                      |
| $A = (1 + x + x^2 + x^3)(1 - x) = 1 - x + x - x^2 + x^2 - x^3 + x^3 - x^4 = 1 - x^4$                                            |                                                                                                                                                   |                                                                                                                                      |
| $B = (x + 1)^3 = (x + 1)(x + 1)^2 = (x + 1)(x^2 + 2x + 1) = x^3 + 2x^2 + x + x^2 + 2x + 1 = x^3 + 3x^2 + 3x + 1$                |                                                                                                                                                   |                                                                                                                                      |
| $C = x^{2016} - 1 = (x^{1008})^2 - 1 = (x^{1008} + 1)(x^{1008} - 1)$                                                            |                                                                                                                                                   |                                                                                                                                      |
| $D = x^3 + 2x^2 + x^2 - 4 = x^3 + 2x^2 + x^2 - 4 = x^2(x + 2) + (x + 2)(x - 2) = (x + 2)[x^2 + (x - 2)] = (x + 2)(x^2 + x - 2)$ |                                                                                                                                                   |                                                                                                                                      |