# الحساب الحرفي

## تمارين توليفية

**تمرين 1**

بسط ما يلي :

$$A=\frac{5}{3}x+\frac{7}{2}x-x \quad ;; \quad B=\frac{7x}{4}-\frac{1}{2}y+5x+\frac{7}{4}y \quad ;; \quad C=\frac{3}{4}x^2-x+\frac{1}{2}x^2+\frac{x}{3}+\frac{1}{2}$$

$$D=-\frac{4}{3}x^3-2x+\frac{1}{2}x^2+x^3-\frac{2}{3}x-4 \quad ;; \quad E=\frac{2}{5}-\frac{1}{3}x^2+x-\frac{5}{2}x^3+\frac{7}{2}-x^2+\frac{2}{3}x$$

**تمرين 2**

بسط ما يلي :

$$a=\frac{2}{3}x-\left(\frac{1}{2}-\frac{5}{2}x^2\right)+\left(\frac{x^2}{2}-x+\frac{5}{3}\right) \quad ;; \quad b=-\left[\frac{5}{3}x-\left(\frac{1}{2}+x\right)\right]-\left(\frac{2}{3}x-\frac{1}{2}x+4\right)$$

$$C=\frac{5}{3}-\left(\frac{2}{3}x^2-1\right)-\left[\frac{3}{4}x+\left(\frac{2x^2}{3}-\frac{x}{2}+\frac{3}{5}\right)+\left(x+\frac{1}{2}\right)-\frac{3}{2}\right]$$

$$D=\frac{3}{2}x^2+2x-\left[-\left(-\frac{5}{3}x^3-\frac{1}{2}x^2+x+6\right)+\frac{2}{3}x-\left(-\frac{x^3}{3}\right)\right]$$

**تمرين 3**

أنشر ثم بسط ما يلي :

$$A=\frac{3}{2}x\left(\frac{x}{5}+\frac{1}{2}\right)-\frac{1}{2}x\left(5x+2\right) \quad ;; \quad B=3x\left(\frac{1}{2}x^2-x-\frac{1}{3}\right)+\frac{4}{3}x\left(1-x\right)$$

$$C=2x\left(\frac{3}{2}x^3-\frac{1}{3}x^2+x-1\right)-\frac{1}{2}x\left(x^3-x^2+\frac{2}{3}x+5\right)$$

**تمرين 4**

أنشر ثم بسط ما يلي :

$$a=\left(\frac{2}{3}x+1\right)^2 \quad ;; \quad b=\left(\frac{3}{4}x+\frac{2}{3}\right)^2 \quad ;; \quad c=\left(5x-\frac{1}{2}\right)^2 \quad ;; \quad d=\left(\frac{3}{7}x-\frac{3}{7}\right)^2$$

$$e=\left(\frac{2}{5}-\frac{x}{2}\right)\left(\frac{2}{5}+\frac{x}{2}\right) \quad ;; \quad f=\left(\frac{5}{3}x-\frac{1}{2}\right)\left(\frac{5}{3}x+\frac{1}{2}\right)$$

## تمرين 5

أنشر ثم بسط ما يلي :

$$A=\left(2x-\frac{1}{2}\right)^2-\left(\frac{x}{3}+\frac{1}{2}\right)\left(\frac{x}{3}-\frac{1}{2}\right) \quad ;; \quad B=3x\left(\frac{1}{2}+\frac{x}{4}\right)-\left(\frac{x}{2}+2\right)^2$$

$$C=\left(x+\frac{3}{2}\right)^2-\frac{5}{2}\left(\frac{1}{2}x^2+\frac{4}{3}x-1\right) \quad ;; \quad D=\left(2x-\frac{1}{2}\right)^2+\left(\frac{2}{3}x+2\right)\left(\frac{2}{3}x-2\right)-\left(\frac{3}{2}+\frac{x}{3}\right)^2$$

## تمرين 6

عمل ما يلي :

$$a=\left(\frac{1}{2}x+\frac{7}{2}\right)^2+\left(\frac{1}{2}x+\frac{7}{2}\right)\left(3x-\frac{2}{5}\right) \quad ;; \quad b=\left(5-\frac{2x}{3}\right)\left(\frac{2}{3}x+5\right)-\left(5-\frac{2x}{3}\right)^2+\left(5-\frac{2x}{3}\right)$$

$$c=\left(\frac{3}{2}x+4\right)^2-\left(\frac{5}{2}-2x\right)^2 \quad ;; \quad d=\left(3x-\frac{1}{2}\right)^2-2\left(3x-\frac{1}{2}\right)\left(\frac{x}{3}+5\right)+\left(\frac{x}{3}+5\right)^2$$

## تمرين 7

عمل ما يلي :

$$A=(3x-2)\left(\frac{2}{5}x+1\right)-(2-3x)\left(\frac{7}{5}x+\frac{1}{2}\right) \quad ;; \quad B=\left(3x+\frac{2}{7}\right)\left(\frac{x}{3}-1\right)+\left(3x+\frac{2}{7}\right)^2+3x+\frac{7}{2}$$

$$C=\left(\frac{2}{3}x+\frac{7}{2}\right)^2-\left(\frac{3}{5}x-\frac{2}{7}\right)^2 \quad ;; \quad D=\left(\frac{3}{2}x+11\right)^2-1+\left(\frac{3}{2}x+10\right)(x+1)$$

## لرفع التحدي

عمل ما يلي :

$$A=32x^2-2$$

$$B=25x^2+20x+3$$

$$C=\frac{9}{16}x^2+\frac{9}{4}x-4$$

$$D=4x^4-12x^2+9$$