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مجموعات الأعداد : $\mathbb{IR}$ ، $\mathbb{Q}$ ، $\mathbb{ID}$ ، $\mathbb{Z}$ ، $\mathbb{IN}$

Exercice

(1)

Calculer et simplifier :

أحسب واختزل إذا كان ممكنا :

$$A = \left((-3+5) \times \frac{2}{7} \right) \div \frac{5}{21}$$

$$B = \left(\frac{-2}{3} \right)^2 - \frac{5}{21} \times \frac{14}{15}$$

$$C = \frac{2+\frac{3}{4}}{5} \times \frac{40}{3} - \frac{7}{6}$$

$$D = \left(-3 + \frac{1}{5} \right) \times \frac{2}{3+\frac{1}{5}} \times \frac{3}{7}$$

$$E = \frac{2+\frac{3}{4}-\frac{1}{3}}{3+\frac{3}{2}-\frac{1}{6}}$$

$$F = \frac{\left(2 + \frac{3}{2} \right) \times \frac{1}{5}}{\left(3 + \frac{3}{5} \right) \times \frac{1}{2}}$$

Exercice

(2)

Calculer et simplifier :

أحسب واختزل إذا كان ممكنا :

$$A = \frac{(5+\sqrt{2})(5-\sqrt{2})}{(3+\sqrt{5})(3-\sqrt{5})}$$

$$B = \frac{\frac{1}{4+\sqrt{3}} + \frac{1}{4-\sqrt{3}}}{\frac{1}{4+\sqrt{3}} - \frac{1}{4-\sqrt{3}}}$$

$$C = \frac{(\sqrt{5}+\sqrt{3})^2 - (\sqrt{5}-\sqrt{3})^2}{(\sqrt{7}+\sqrt{3})(\sqrt{7}-\sqrt{3})}$$

$$D = -\frac{3}{5} + \frac{7}{10} - \left[-\frac{5}{2} + \frac{7}{5} - \left(-\frac{3}{2} + \frac{1}{10} \right) \right] + \frac{11}{10}$$

Exercice

(3)

أنشئتم بسط ما يلي :

$$A = (-3x+2)(-2x-4) - 3(x-6)(2x+5)$$

$$B = (-7x^3+5)(-2x^2+3x-1) - 5x^3(2x^2+3x-6) - 4x^5+35x^4-35x^3+\sqrt{2008}$$

$$C = (-3x+2)(-5x^2+2x-4) - 3(x-6)(2x+5)$$

Exercice

(4)

أنشئتم بسط ما يلي :

$$A = (\sqrt{5}-x)(\sqrt{5}+x) + 3x^2 - 7x(2x-1)$$

$$B = (x\sqrt{3}-y)^2 - 3x^2 + 2y^2 + 3xy\sqrt{3} - 5$$

$$C = (3x\sqrt{7}+2)^2 - 64x^2 - 13x\sqrt{7} + 11\sqrt{5}$$

$$D = (x\sqrt{11}+y\sqrt{3})^2 - 12x^2 - 6y^2 - 13xy\sqrt{33}$$

Exercice

(5)

عمل الصيغ الجبرية التالية :

$$A = (4x^2 - 25) - (x-6)(2x+5)$$

$$B = (3x-7)^2 - (9x^2 - 49) - 5x(3x-7)$$

$$C = 25x^2 - 30x + 9 + (3x - 7)(5x - 3) - 10x + 6$$

$$D = (\sqrt{2}x - 3)^2 - (7x\sqrt{2}x^2 - 21x)$$

$$E = (3x - 1)^2 - 25$$

$$F = (3x - 1)^2 - 7$$

$$H = (3x - 1)^2 - (x - 3)^2$$

$$K = 2(3x - 1)^2 - (x - 3)^2$$

$$M = (2x - 7)^2 - 16$$

$$T = 81(3x - 2)^2 - 16$$

Exercice

(6)

حل المعادلات الآتية :

$$(x^2 - 9) - (x - 3)(2x - 5) = 0$$

$$(2x - 3)^2 - (4x^2 - 9) + 3x(2x - 3) = 0$$

$$(5x + 3)^2 + (3x - 7)(5x + 3) - 10x - 6 = 0 \quad (\sqrt{2}x - 3)^2 - (2x^2 - 9) + 3x(\sqrt{2}x - 3) = 0$$

$$(3x - 1)^2 - 25 = 0$$

$$(3x - 1)^2 - 7 = 0$$

$$(3x - 1)^2 - (x - 3)^2 = 0$$

$$2(3x - 1)^2 - (x - 3)^2 = 0$$

$$(2x - 7)^2 = 16$$

$$81(3x - 2)^2 = 16$$

Exercice

(7)

Calculer et simplifier :

أحسب و بسط ما يلي:

$$A = \frac{7^{-2} \cdot 5^3 \times (7^2 \cdot 5^{-3})^5}{7^{12} \cdot 5^0 \times (7^{-1} \cdot 5^2)^3}$$

$$B = \frac{9 \times (10^2)^3 \times 2^2 \times 10^8 \times 10^6}{(10^8)^2}$$

$$C = \frac{4,5 \times 10^{-4} \times 8 \times 10^6}{3^2 \times 10^2}$$

$$D = \frac{54 \times 10^{-1} - 83 \times 10^{-2}}{10^{-2}}$$

$$E = \frac{12 \times 10^{-4} \times 5 \times 10^6}{15 \times 10^3 \times 2 \times 10^2}$$

$$F = \frac{10^{-8} \times 0,7 \times 10^{12}}{21 \times 10^3}$$

$$G = \frac{7a \times b^{-5} \times (a \times b^3)^2}{3(a^5 \times b^2)^{-3} \times a^{-5} \times b^7}$$

$$H = \frac{7a^6 \times b^{-5} \times c^7 \times (a \times c^3)^2}{3(a^5 \times b^2)^{-3} \times a^{-5} \times c^7}$$

$$K = \frac{a^5 \times b^{-5} \times (-a^8 \times b^2)^{-3}}{3(-a^3 \times b^5)^{-3} \times a^{-12} \times b^{17}}$$

Exercice

(8)

أعط الكتابة العلمية للأعداد التالية:

$$A = 12 \times 10^{-4} \times 5 \times 10^6$$

$$B = 3 \times (10^2)^{-3} \times 4,5 \times 10^8 \times 10^{-5}$$

$$C = \frac{4,5 \times 10^{-4} \times 8 \times 10^6}{3^2 \times 10^2}$$

$$D = \frac{7,4 \times 10^{-1} - 11,52 \times 10^{-2}}{2 \times 10^{-3}}$$

$$E = \frac{24 \times 10^2 \times 3,5 \times 10^5}{8 \times 10^{-1} \times 21 \times 10^4}$$

$$F = \frac{10^{-8} \times 0,63 \times 10^{12}}{21 \times 10^3}$$