

Exercice n°1 : (voir thèmes 2 et 5 p 281, 283)

$$\frac{51}{20} \times \frac{-15}{-34} = \frac{51 \times 15}{20 \times 34} = \frac{17 \times 3 \times 3 \times 5}{4 \times 5 \times 17 \times 2} = \frac{9}{8}$$

$$\frac{7}{15} - \frac{14}{15} \times \left(\frac{5}{7} - \frac{1}{3} \right) = \frac{7}{15} - \frac{14}{15} \times \left(\frac{15-7}{21} \right) = \frac{7}{15} - \frac{14}{15} \times \frac{8}{21} = \frac{7}{15} - \frac{7 \times 2 \times 8}{15 \times 7 \times 3} = \frac{7}{15} - \frac{16}{45} = \frac{21}{45} - \frac{16}{45} = \frac{5}{45} = \frac{1}{9}$$

Exercice n°2 :

$$G = 3 - 10 \times \frac{2}{4-3^2} = 3 - 10 \times \frac{2}{4-9} = 3 - 10 \times \frac{2}{-5} = 3 + \frac{5 \times 2 \times 2}{5} = 3 + 4 = 7 ;$$

$$H = -3^2 - 3 \times \frac{\sqrt{25-9}}{(3 \times 2)^2} = -9 - 3 \times \frac{\sqrt{16}}{6^2} = -9 - 3 \times \frac{4}{36} = -9 - \frac{3 \times 4}{3 \times 3 \times 4} = -9 - \frac{1}{3} = -\frac{28}{3} ;$$

$$I = 1 + \frac{1}{1 + \frac{1}{1+1}} = 1 + \frac{1}{1 + \frac{1}{2}} = 1 + \frac{1}{\frac{3}{2}} = 1 + \frac{2}{3} = \frac{5}{3}$$

Exercice n°3 : (voir thèmes 4 et 6 page 282, 283)

$$1) A = 2\sqrt{3} \times 6\sqrt{3} = 2 \times 6 \times \sqrt{3} \times \sqrt{3} = 12(\sqrt{3})^2 = 12 \times 3 = 36$$

$$B = \sqrt{45} + 2\sqrt{5} - 3\sqrt{20} = \sqrt{9 \times 5} + 2\sqrt{5} - 3\sqrt{4 \times 5} = 3\sqrt{5} + 2\sqrt{5} - 6\sqrt{5} = -\sqrt{5}$$

$$C = \frac{2\sqrt{10}}{5} \times \frac{3\sqrt{2}}{\sqrt{25}} = \frac{2\sqrt{10} \times 3\sqrt{2}}{5 \times \sqrt{25}} = \frac{6\sqrt{20}}{5 \times 5} = \frac{6\sqrt{4 \times 5}}{25} = \frac{6 \times 2\sqrt{5}}{25} = \frac{12\sqrt{5}}{25}$$

$$2) D = (3 + 2\sqrt{2})^2 = 3^2 + 2 \times 3 \times 2\sqrt{2} + (2\sqrt{2})^2 = 9 + 12\sqrt{2} + 8 = 17 + 12\sqrt{2}$$