

Interrogation A	Mathématiques	Troisième
Coefficient : 2	Fractions - CORRECTION	Durée : 50 mn

Exercice 1. (6 points)

Calculer en donnant le résultat sous forme de fraction irréductible.

$$A = \frac{1}{3} + \frac{1}{2} = \frac{5}{6} ; \quad B = 2 - \frac{3}{4} = \frac{5}{4} ; \quad C = \frac{2}{5} \times \frac{15}{8} = \frac{3}{4}$$

$$D = \frac{20}{30} \div \frac{40}{90} = \frac{3}{2} ; \quad E = \frac{700}{500} \times \frac{200}{300} \times \frac{15}{49} = \frac{2}{7} ; \quad F = \frac{1}{1 + \frac{1}{2}} = \frac{2}{3}$$

Exercice 2. (8 points)

Calculer

$$G = \frac{\frac{5}{2} - \frac{7}{4}}{\frac{3}{8}} = \frac{\frac{3}{4}}{\frac{3}{8}} = \frac{3}{4} \times \frac{8}{3} = 2 \quad \text{donc } \boxed{G = 2}$$

$$H = \frac{13}{14} - \frac{1}{15} \times \frac{10}{7} = \frac{13}{14} - \frac{2 \times 5}{3 \times 5 \times 7} = \frac{13}{14} - \frac{2}{21} = \frac{13 \times 3}{14 \times 3} - \frac{2 \times 2}{21 \times 2} = \frac{35}{42} - \frac{5}{42} = \frac{30}{42} = \frac{5}{7} \quad \text{donc } \boxed{H = \frac{5}{7}}$$

$$I = 5 - 3 \times \frac{5}{6} = 5 - \frac{3 \times 5}{2 \times 3} = 5 - \frac{5}{2} = \frac{5}{2} \quad \text{donc } \boxed{I = \frac{5}{2}}$$

$$J = \frac{2}{3} - \left(\frac{3}{2}\right)^2 = \frac{2}{3} - \frac{9}{4} = -\frac{19}{12} \quad \text{donc } \boxed{J = -\frac{19}{12}}$$

Exercice 3. (2+3=5 points)

Soit $f(x) = x^2 - 5x + 3$; Calculer $f\left(-\frac{3}{2}\right)$, $f(-1)$, $f(0)$ et $f(2)$.

$$f\left(-\frac{3}{2}\right) = \left(-\frac{3}{2}\right)^2 - 5 \times \left(-\frac{3}{2}\right) + 3 = \frac{9}{4} + \frac{15}{2} + 3 = \frac{9 + 30 + 12}{4} = \frac{51}{4}$$

$$f(-1) = (-1)^2 - 5 \times (-1) + 3 = 1 + 5 + 3 = \boxed{9}$$

$$\boxed{f(0) = 3}$$

$$\boxed{f(2) = -3}$$

Exercice 4. Bonus 3 points

Soit $g(x) = (2x - 1)(2 - 3x) - 2(x + 2)(1 - x)$

Développer $g(x)$ et calculer $g\left(\frac{-1}{2}\right)$

$$\boxed{g(x) = -4x^2 + 9x - 6}$$

$$g\left(\frac{-1}{2}\right) = -\frac{23}{2}$$