

Durée : 60'

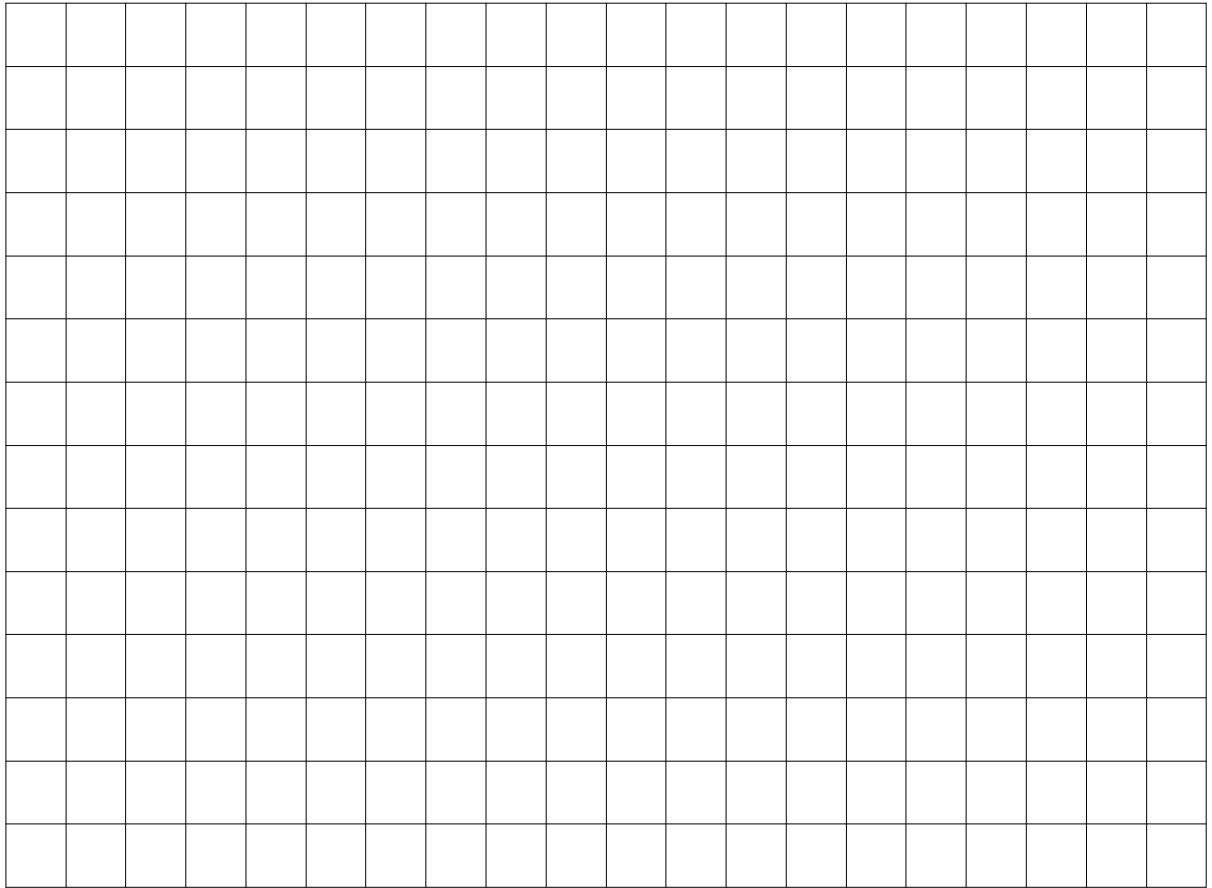
Calculatrice non autorisée

Question 1

24 (=7+5+7+5) points

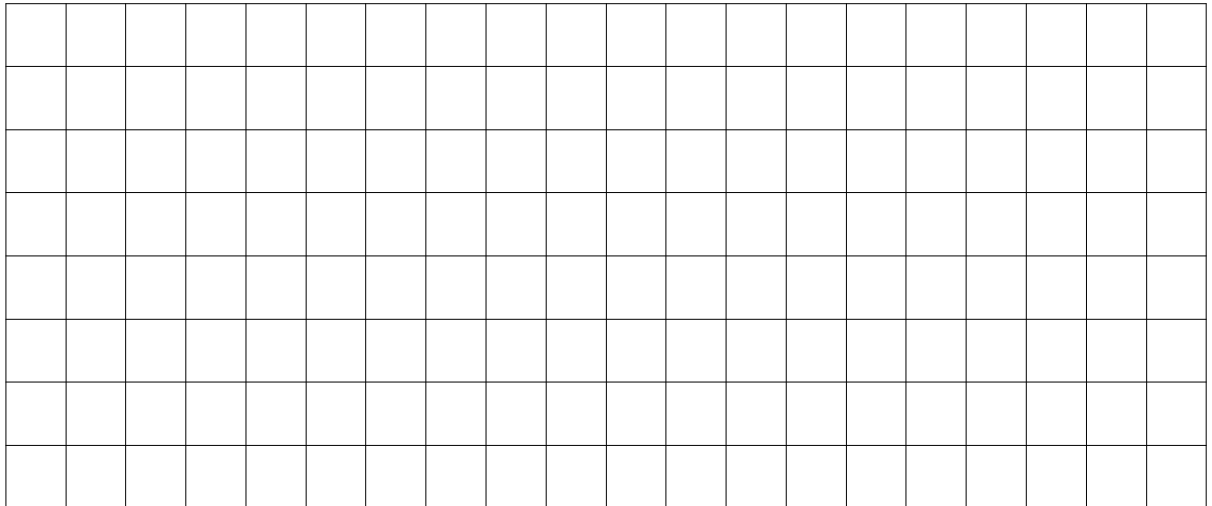
Factoriser les expressions suivantes autant que possible :

(1) $(a - 5)(3a^4 - 2a^2) + 2(5 - a)(a^4 + 3a^2 - 8)$

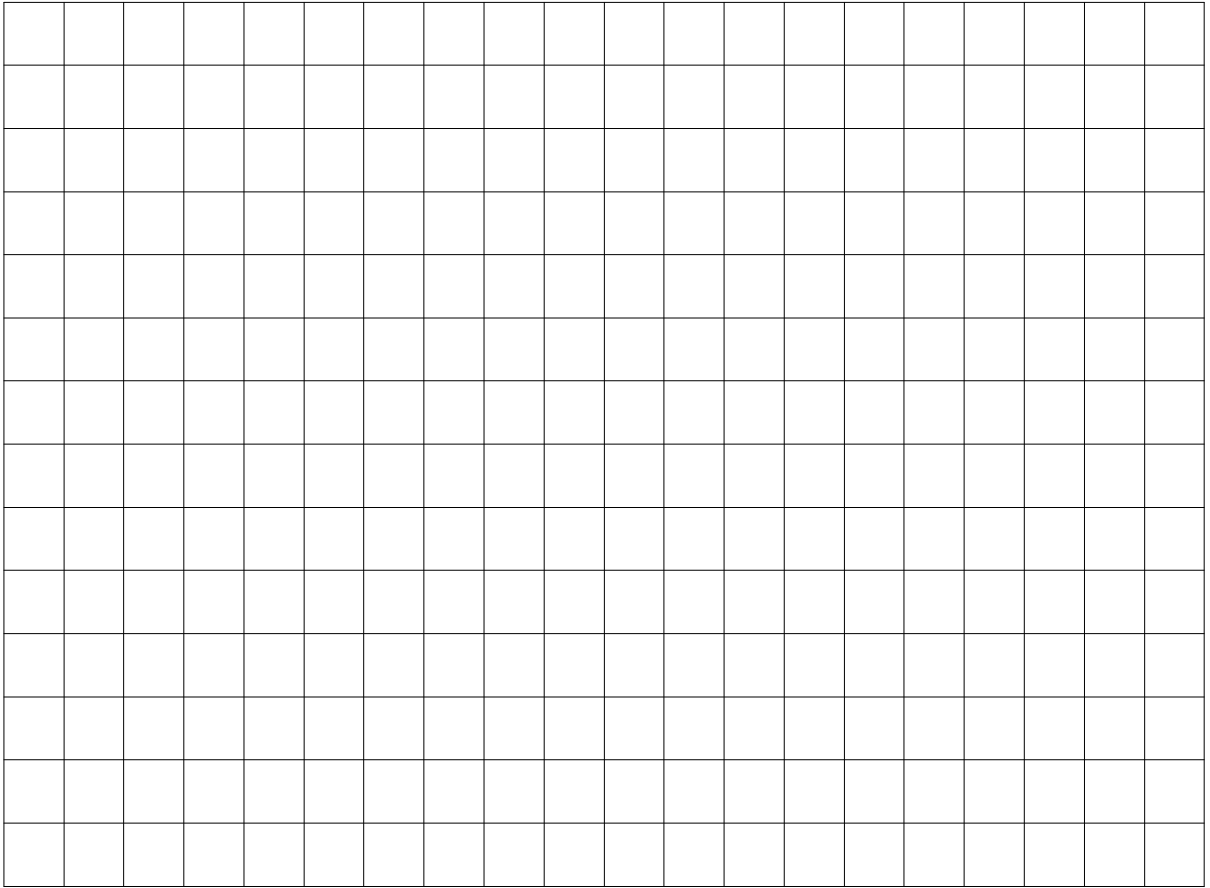


(2) $a^4 - 4a^2 + 4a - 1$

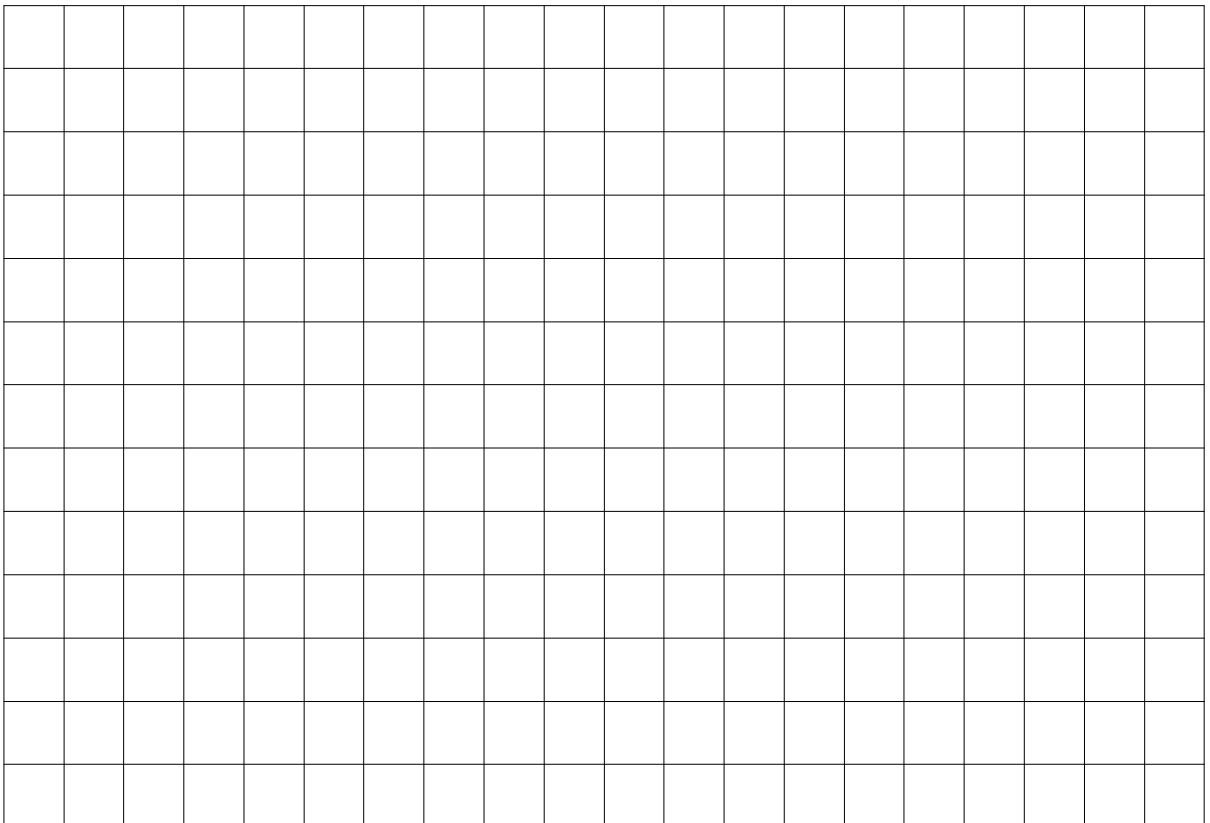
(Indication : grouper les trois derniers termes)



(3) $\left(x^2 - 2x - \frac{5}{2}\right)^2 - \left(2x - \frac{13}{2}\right)^2$



(4) $49x^2 - (7x - 4)(x + 16) - 16$



Question 4

21 (=7+9+5) points

Calculer et simplifier autant que possible :

(1) $C = \frac{3x - 6y}{x^2 + 2x + 1} \cdot \frac{-x - 2y}{9} : \frac{4y^2 - x^2}{x^2 + x}$

(2) $D = \frac{x}{3x - 1} - \frac{x + 1}{6x + 2} + \frac{6x^2}{1 - 9x^2}$

$$(3) \quad E = \frac{\frac{a}{3}}{2a^2} - 4 \cdot \frac{a}{\frac{a+1}{2}}$$

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