

Correction du sujet **A**

Exercice 1

Mettre sous forme canonique : $f(x) = -2x^2 - 9x - 2$.

Correction

$$\alpha = -\frac{b}{2a} = -\frac{-9}{2 \times (-2)} = \frac{-9}{4}$$

$$\beta = f(\alpha) = -2 \times \left(\frac{-9}{4}\right)^2 - 9 \times \left(\frac{-9}{4}\right) - 2 = \frac{65}{8}$$

$$\text{Donc : } f(x) = -2 \left(x + \frac{9}{4}\right)^2 + \frac{65}{8}.$$

Correction du sujet **B**

Exercice 2

Mettre sous forme canonique : $f(x) = 9x^2 + 3x - 1$.

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Correction

$$\alpha = -\frac{b}{2a} = -\frac{3}{2 \times 9} = -\frac{1}{6}$$

$$\beta = f(\alpha) = 9 \times \left(-\frac{1}{6}\right)^2 + 3 \times \left(-\frac{1}{6}\right) - 1 = -\frac{5}{4}$$

$$\text{Donc : } f(x) = 9\left(x + \frac{1}{6}\right)^2 - \frac{5}{4}.$$

Correction du sujet C

Exercice 3

Mettre sous forme canonique : $f(x) = 4x^2 + 7x + 1$.

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Correction

$$\alpha = -\frac{b}{2a} = -\frac{7}{2 \times 4} = -\frac{7}{8}$$

$$\beta = f(\alpha) = 4 \times \left(-\frac{7}{8}\right)^2 + 7 \times \left(-\frac{7}{8}\right) + 1 = \frac{-33}{16}$$

$$\text{Donc : } f(x) = 4 \left(x + \frac{7}{8}\right)^2 - \frac{33}{16}.$$

Correction du sujet **D**

Exercise 4

Mettre sous forme canonique : $f(x) = 5x^2 - x - 7$.

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Correction

$$\alpha = -\frac{b}{2a} = -\frac{-1}{2 \times 5} = \frac{1}{10}$$

$$\beta = f(\alpha) = 5 \times \left(\frac{1}{10}\right)^2 - 1 \times \left(\frac{1}{10}\right) - 7 = \frac{-141}{20}$$

$$\text{Donc : } f(x) = 5 \left(x - \frac{1}{10}\right)^2 - \frac{141}{20}.$$

Correction du sujet **E**

Exercice 5

Mettre sous forme canonique : $f(x) = 9x^2 - 9x - 1$.

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Correction

$$\alpha = -\frac{b}{2a} = -\frac{-9}{2 \times 9} = \frac{1}{2}$$

$$\beta = f(\alpha) = 9 \times \left(\frac{1}{2}\right)^2 - 9 \times \left(\frac{1}{2}\right) - 1 = \frac{-13}{4}$$

$$\text{Donc : } f(x) = 9\left(x - \frac{1}{2}\right)^2 - \frac{13}{4}.$$



Correction du sujet **F**

Exercice 6

Mettre sous forme canonique : $f(x) = -8x^2 - 4x - 5$.

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Correction

$$\alpha = -\frac{b}{2a} = -\frac{-4}{2 \times (-8)} = \frac{-1}{4}$$

$$\beta = f(\alpha) = -8 \times \left(\frac{-1}{4}\right)^2 - 4 \times \left(\frac{-1}{4}\right) - 5 = \frac{-9}{2}$$

$$\text{Donc : } f(x) = -8 \left(x + \frac{1}{4}\right)^2 - \frac{9}{2}.$$