

Γ ΛΥΚΕΙΟΥ ΜΕΡΟΣ Α

15.33 1)

Είναι $f'(x) = 3x^2 + 2(\alpha + 2)x - 3$, οπότε

$$\begin{aligned} f'(-1) = 6 &\Rightarrow 3(-1)^2 + 2(\alpha + 2)(-1) - 3 = 6 \Rightarrow \cancel{3} - 2(\alpha + 2) - \cancel{3} = 6 \Rightarrow \\ -2(\alpha + 2) = 6 &\Rightarrow -2\alpha - 4 = 6 \Rightarrow -2\alpha = 10 \Rightarrow \alpha = -5 \end{aligned}$$

15.33 2)

Είναι $f'(x) = 2x + \alpha$, οπότε

$$f'(2) = 5 \Rightarrow 2 \cdot 2 + \alpha = 5 \Rightarrow 4 + \alpha = 5 \Rightarrow \boxed{\alpha = 1}$$

15.33 3)

Είναι $f'(x) = 3x^2 + 2\alpha x - 2$, οπότε

$$f'(3) = 1 \Rightarrow 3 \cdot 3^2 + 2\alpha \cdot 3 - 2 = 1 \Rightarrow 6\alpha + 25 = 1 \Rightarrow 6\alpha = -24 \Rightarrow \boxed{\alpha = -4}$$

15.33 4)

Είναι $f'(x) = 2x + \frac{\alpha}{x^2}$, οπότε

$$f'(1) = 5 \Rightarrow 2 \cdot 1 + \frac{\alpha}{1^2} = 5 \Rightarrow 2 + \alpha = 5 \Rightarrow \boxed{\alpha = 3}$$