

Γ ΛΥΚΕΙΟΥ ΜΕΡΟΣ Α

15.29 1)

$$\alpha) f(x) = x^5 + 2x^2 \Rightarrow f'(x) = 5x^4 + 4x \Rightarrow f''(x) = 20x^3 + 4 \Rightarrow f'''(x) = 60x^2$$

$$\beta) f(x) = \eta\mu 2x \Rightarrow f'(x) = 2\sigma\upsilon\nu 2x \Rightarrow f''(x) = -2\eta\mu 2x \cdot 2 \Rightarrow \\ \Rightarrow f''(x) = -4\eta\mu 2x \Rightarrow f'''(x) = -4\sigma\upsilon\nu 2x \cdot 2 \Rightarrow f'''(x) = -8\sigma\upsilon\nu 2x$$

15.29 2)

$$f'(x) = 3x^2 + 6x - 5$$

$$f''(x) = 6x + 6$$

$$f'''(x) = 6$$

15.29 3)

$$f'(x) = 2x + \sigma\upsilon\nu x$$

$$f''(x) = 2 - \eta\mu x$$

$$f'''(x) = -\eta\mu x$$

15.29 4)

$$f'(x) = e^x \sigma\upsilon\nu x - e^x \eta\mu x$$

$$f''(x) = \cancel{e^x \sigma\upsilon\nu x} - e^x \eta\mu x - e^x \eta\mu x - \cancel{e^x \sigma\upsilon\nu x} = -2e^x \eta\mu x$$

$$f'''(x) = -2e^x \eta\mu x - 2e^x \sigma\upsilon\nu x$$

15.29 5)

$$f'(x) = -3\eta\mu 3x$$

$$f''(x) = -9\sigma\upsilon\nu 3x$$

$$f'''(x) = 27\eta\mu 3x$$