

ΕΠΑΝΑΛΗΨΗ

1. Να υπολογισθούν τα όρια:

$$\text{I)} \lim_{x \rightarrow 0} \frac{|x^2 + \eta \mu x - 3| - 3}{2x}$$

$$\text{II)} \lim_{x \rightarrow 2} \frac{|x^2 - 2x| + x - 2}{x^2 - 4}$$

$$\text{III)} \lim_{x \rightarrow 3} \frac{\sqrt{x^2 - 6x + 9}}{4x - 12}$$

$$\text{IV)} \lim_{x \rightarrow 0} \left(\sqrt{x} \eta \mu \frac{x+1}{\sqrt{x}} \right)$$

2. Να υπολογισθούν:

$$\text{I)} \lim_{x \rightarrow 1} f(x) \quad \text{II)} \lim_{x \rightarrow 1} g(x) \quad \text{III)} \lim_{x \rightarrow 1} (f(x) + g(x))$$

$$\text{III)} \lim_{x \rightarrow 1} (f(x) \cdot g(x)) \quad \text{αν } f(x) = \frac{1}{|x-1|} \quad \text{και } g(x) = \frac{1}{|x^2-1|}$$

3. Να υπολογισθούν: $\lim_{x \rightarrow +\infty} f(x)$ και $\lim_{x \rightarrow -\infty} f(x)$

$$\text{Αν } f(x) = \frac{3^x + 4}{2^x - 5}, \quad f(x) = \frac{3^{x+2} - 5e^x}{4 \cdot 3^x + e^{x+1}}, \quad g(x) = \frac{2 \cdot 5^x - 3^{x+1}}{4 \cdot 5^x + 6^x}$$

4. Να υπολογισθούν: I) $\lim_{x \rightarrow -\infty} (\sqrt{x^2 - 4x + 3} - \lambda x)$

$$\text{II)} \lim_{x \rightarrow +\infty} (\sqrt{x^2 - 3x + 2} - (\lambda - 1)x - 12) \quad \text{III)} \lim_{x \rightarrow +\infty} \left(\frac{3x+2}{x^2-1} \eta \mu x \right)$$

$$\text{IV)} \lim_{x \rightarrow +\infty} \frac{x + \eta \mu x}{x + \sigma \upsilon \nu x}$$

$$\text{V)} \lim_{x \rightarrow -3} \frac{x+4}{x^2+6x+9}$$

$$5. \lim_{x \rightarrow 2} f(x), \quad f(x) = \frac{2x - \lambda^2}{x^2 - 4x + 4}$$

$$6. \lim_{x \rightarrow 1} \frac{3x^2 + 2\lambda x - \lambda^2}{|x-1|}$$

$$7. \lim_{x \rightarrow +\infty} \frac{(\lambda^2 - \lambda - 2)x^3 - (\lambda - 1)x^2 + 2x + 3}{(\lambda - 1)x^2 + \lambda x + 1}$$

$$8. \text{ Δίνονται } f(x) = \frac{ax^2 - (b+3)x + 2a+b}{x^2 - 4x + 3}, \quad g(x) = \sqrt{x^2 + 2x + 3} - ax + b$$

$$\alpha) \text{ Π.Ο.} = ;$$

$$\beta) a, b = ; \quad \text{ώστε I) } \lim_{x \rightarrow 1} f(x) = 2$$

$$\text{και II) } \lim_{x \rightarrow +\infty} g(x) = 5$$