

ΑΠΑΝΤΗΣΕΙΣ ΜΑΘΗΜΑΤΙΚΩΝ
ΕΠΑΛ

ΘΕΜΑ 1ο : Α₁. Θεωρία σχολικού

A₂. α. Λ β. Σ γ. Σ

A₃. α. $(x^p)' = p \cdot x^{p-1}$, β. $(\cos x)' = -\sin x$

$$\gamma. \bar{x} = \frac{x_1 \omega_1 + x_2 \omega_2 + \dots + x_n \omega_n}{\omega_1 + \omega_2 + \dots + \omega_n}$$

ΘΕΜΑ 2ο : Β₁. $K = \lim_{x \rightarrow 1} \frac{x^2 + x - 2}{x - 1} = \lim_{x \rightarrow 1} \frac{(x-1)(x+2)}{x-1}$

$$= \lim_{x \rightarrow 1} (x+2) = 3$$

B₂. Οι βαθμοί γίνονται : 4, 3, 5, 6, 7, 4, 6, 5, 6, 4

$$\bar{x} = \frac{4+3+5+6+7+4+6+5+6+4}{10} = 5$$

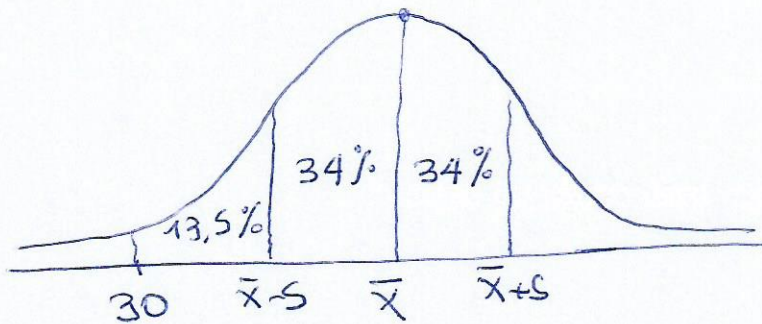
$$B_3 \quad S^2 = \frac{(3-5)^2 + (4-5)^2 \cdot 3 + (5-5)^2 \cdot 2 + (6-5)^2 \cdot 3 + (7-5)^2 \cdot 1}{10} =$$

$$= \frac{4+3+3+4}{10} = \frac{14}{10} = 1,4$$

$$B_4. \quad CV = \frac{S}{|\bar{x}|} = \frac{\sqrt{1,4}}{5} = \frac{1,18}{5} = 23,6\%$$

ΘΕΜΑ Γ

Γ₁.



$$\bar{x} = s = 40 \text{ ε-μ}$$

$$\Gamma_2. \quad \bar{x} - s = 35 \Leftrightarrow s = 5 \text{ ε-μ}$$

$$\Gamma_3. \quad \frac{16}{100} \cdot 400 = 64 \text{ εργαζόμενοι}$$

$$\Gamma_4. \quad \frac{81,5}{100} \cdot 400 = 326 \text{ εργαζόμενοι}$$

ΘΕΜΑ Δ

$$\Delta_1. \quad f'(x) = -x^2 + 4x - 3$$

x	$-\infty$	1	3	$+\infty$	
$f'(x)$	-	0	+	0	-
$f(x)$		↘	↗	↘	
		min	max		

$$\Delta_2. \quad f(1) = -\frac{1}{3} + 2 - 3 + 1 = -\frac{1}{3}$$

$$f(3) = -9 + 18 - 9 + 1 = 1$$

$$\Delta_3. \quad f'(x) = 1 \Leftrightarrow -x^2 + 4x - 3 = 1 \Leftrightarrow x^2 - 4x + 4 = 0$$
$$\Leftrightarrow (x-2)^2 = 0 \Leftrightarrow x = 2 \quad A(2, \frac{1}{3})$$
$$f(2) = -\frac{8}{3} + 8 - 6 + 1 = \frac{1}{3}$$

$$\Delta_4. \quad f''(x) = -2x + 4$$

$$S_x = 3 \quad \text{τότε λόγω γεωμτρικής εφαρμογής} \quad S_y = |1-2| \cdot 3 = 6$$