

Β ΛΥΚΕΙΟΥ ΘΕΤΙΚΟΣ ΠΡΟΣΑΝΑΤΟΛΙΣΜΟΣ

5.12 1)

α) Είναι $\overrightarrow{AB} = (x-2, 3+4) \Leftrightarrow \overrightarrow{AB} = (x-2, 7)$ και $\overrightarrow{\Gamma\Delta} = (-1-5, 2+2) \Leftrightarrow \overrightarrow{\Gamma\Delta} = (-6, 4)$

Οπότε $\overrightarrow{AB} \cdot \overrightarrow{\Gamma\Delta} = -2 \Leftrightarrow -6 \cdot (x-2) + 4 \cdot 7 = -2 \Leftrightarrow -6x + 12 + 28 = -2 \Leftrightarrow -6x = -42 \Leftrightarrow x = 7$

β) Είναι $\overrightarrow{AB} = (5+3, 2-6) \Leftrightarrow \overrightarrow{AB} = (8, -4)$ και $\overrightarrow{\Gamma\Delta} = (x+1, 4+4) \Leftrightarrow \overrightarrow{\Gamma\Delta} = (x+1, 8)$

Οπότε $\overrightarrow{AB} \perp \overrightarrow{\Gamma\Delta} \Leftrightarrow \overrightarrow{AB} \cdot \overrightarrow{\Gamma\Delta} = 0 \Leftrightarrow 8 \cdot (x+1) - 4 \cdot 8 = 0 \Leftrightarrow 8x + 8 - 32 = 0 \Leftrightarrow 8x = 24 \Leftrightarrow x = 3$

5.12 2)

Είναι $\overrightarrow{AB} = (-2-4, 5-x) = (-6, 5-x)$ και $\overrightarrow{\Gamma\Delta} = (3-0, -4-(-1)) = (3, -3)$

Οπότε: $\overrightarrow{AB} \cdot \overrightarrow{\Gamma\Delta} = 3 \Leftrightarrow (-6, 5-x) \cdot (3, -3) = 3 \Leftrightarrow -18 - 3(5-x) = 3 \Leftrightarrow$
 $\Leftrightarrow -18 - 15 - 3x = 3 \Leftrightarrow 3x = 36 \Leftrightarrow x = 12$

5.12 3)

Είναι $\overrightarrow{AB} = (-1-(-2), 4-(-1)) = (1, 5)$ και $\overrightarrow{\Gamma\Delta} = (6-(-4), x-3) = (10, x-3)$

Οπότε: $\overrightarrow{AB} \perp \overrightarrow{\Gamma\Delta} \Leftrightarrow \overrightarrow{AB} \cdot \overrightarrow{\Gamma\Delta} = 0 \Leftrightarrow 10 + 5(x-3) = 0 \Leftrightarrow 5x - 5 = 0 \Leftrightarrow x = 1$

5.12 4)

Είναι $\overrightarrow{AB} = (-6-x, -6)$ και $\overrightarrow{\Gamma\Delta} = (8-x, -4-4) = (8-x, -8)$

$\hat{A} = 90^\circ \Leftrightarrow \overrightarrow{AB} \perp \overrightarrow{AG} \Leftrightarrow \overrightarrow{AB} \cdot \overrightarrow{AG} = 0 \Leftrightarrow (-6-x, -6) \cdot (8-x, -8) = 0 \Leftrightarrow$
 $\Leftrightarrow (-6-x)(8-x) + 48 = 0 \Leftrightarrow -48 + 6x - 8x + x^2 + 48 = 0 \Leftrightarrow$
 $\Leftrightarrow x^2 - 2x = 0 \Leftrightarrow x(x-2) = 0 \Leftrightarrow x = 0 \text{ ή } x = 2$