

Β ΛΥΚΕΙΟΥ ΘΕΤΙΚΟΣ ΠΡΟΣΑΝΑΤΟΛΙΣΜΟΣ

12.1 1)

Είναι $\overrightarrow{AB} \stackrel{(x_2-x_1, y_2-y_1)}{=} (1+4, -2-3) = (5, -5)$ και $\overrightarrow{AG} \stackrel{(x_2-x_1, y_2-y_1)}{=} (-2+4, 3-3) = (2, 0)$, οπότε

$$(AB\Gamma) = \frac{1}{2} \left| \det \left(\overrightarrow{AB}, \overrightarrow{AG} \right) \right| = \frac{1}{2} \left| \begin{vmatrix} -5 & 5 \\ 2 & 0 \end{vmatrix} \right| = \frac{1}{2} |0 - 10| = \frac{10}{2} = 5$$

12.1 2)

Είναι

$$\overrightarrow{AB} = (1 - (-2), -3 - 1) = (3, -4)$$

και

$$\overrightarrow{AG} = (4 - (-2), -1 - 1) = (6, -2)$$

οπότε

$$(AB\Gamma) = \frac{1}{2} \left| \det \left(\overrightarrow{AB}, \overrightarrow{AG} \right) \right| = \frac{1}{2} \left| \begin{vmatrix} 3 & -4 \\ 6 & -2 \end{vmatrix} \right| = \frac{1}{2} (-6 + 24) = 9$$

12.1 3)

Είναι

$$\overrightarrow{AB} = (1 - 4, -3 + 2) = (-5, -1)$$

και

$$\overrightarrow{AG} = (0 - (-1), -2 - (-3)) = (1, 1)$$

οπότε

$$(AB\Gamma) = \frac{1}{2} \left| \det \left(\overrightarrow{AB}, \overrightarrow{AG} \right) \right| = \frac{1}{2} \left| \begin{vmatrix} -5 & -1 \\ 1 & 1 \end{vmatrix} \right| = \frac{1}{2} |-5 + 1| = 2$$

12.1 4)

Είναι

$$\overrightarrow{AB} = (3 - 0, 0 - 4) = (3, -4)$$

και

$$\overrightarrow{AG} = (1 - 0, 1 - 4) = (1, -3)$$

οπότε

$$(AB\Gamma) = \frac{1}{2} \left| \det \left(\overrightarrow{AB}, \overrightarrow{AG} \right) \right| = \frac{1}{2} \left| \begin{vmatrix} 3 & -4 \\ 1 & -3 \end{vmatrix} \right| = \frac{1}{2} |-9 + 4| = \frac{5}{2}$$

12.1 5)

Είναι $\overrightarrow{AB} = (2 - 3, -1 - 1) = (-1, -2)$

και

$$\overrightarrow{AG} = (4 - 2, -1 - (-1)) = (2, 0)$$

οπότε

$$(AB\Gamma) = \frac{1}{2} \left| \det \left(\overrightarrow{AB}, \overrightarrow{AG} \right) \right| = \frac{1}{2} \left| \begin{vmatrix} -1 & -2 \\ 2 & 0 \end{vmatrix} \right| = \frac{1}{2} |-1 \cdot 0 + 4| = 2$$

12.1 6)

Είναι

$$\overrightarrow{AB} = (4 - (-5), -2 - 1) = (9, -3)$$

και

$$\overrightarrow{AG} = (0 - (-5), 6 - 1) = (5, 5)$$

οπότε

$$(AB\Gamma) = \frac{1}{2} \left| \det \left(\overrightarrow{AB}, \overrightarrow{AG} \right) \right| = \frac{1}{2} \left| \begin{vmatrix} 9 & -3 \\ 5 & 5 \end{vmatrix} \right| = \frac{1}{2} (9 \cdot 5 + 3 \cdot 5) = 30$$

12.1 7)

Είναι

$$\overrightarrow{AB} = (3-2, -1-1) = (1, -2)$$

και

$$\overrightarrow{AG} = (1-2, 0-1) = (-1, -1)$$

οπότε

$$(AB\Gamma) = \frac{1}{2} \left| \det \left(\overrightarrow{AB}, \overrightarrow{AG} \right) \right| = \frac{1}{2} \left| \begin{vmatrix} 1 & -2 \\ -1 & -1 \end{vmatrix} \right| = \frac{1}{2} |-1-2| = \frac{3}{2}$$

12.1 8)

Είναι

$$\overrightarrow{AB} = (2-0, 2-0) = (2, 2)$$

και

$$\overrightarrow{AG} = (-5-0, -5-0) = (-5, -5)$$

οπότε

$$(AB\Gamma) = \frac{1}{2} \left| \det \left(\overrightarrow{AB}, \overrightarrow{AG} \right) \right| = \frac{1}{2} \left| \begin{vmatrix} 2 & 2 \\ -5 & -5 \end{vmatrix} \right| = \frac{1}{2} |-10-(-10)| = 0$$