

Евотута 1

$$7. \textcircled{\alpha} \begin{cases} 2x - (y-1) = x \\ 3(x-y) - 1 = y-6 \end{cases}$$

$$\begin{cases} 2x - y + 1 = x \\ 3x - 3y - 1 = y - 6 \end{cases}$$

$$\begin{cases} x - y = -1 \\ 3x - 4y = -5 \end{cases} \Rightarrow \boxed{y = x + 1}$$

$$3x - 4(x+1) = -5$$

$$3x - 4x - 4 = -5$$

$$\textcircled{y = 2}$$

$$-x = -1$$

$$\textcircled{x = 1}$$

$$8. \quad \textcircled{\alpha} \quad \begin{cases} \frac{x}{2} = \frac{y}{3} \\ \frac{x+2}{3} - \frac{y}{6} = 1 \end{cases}$$

$$\begin{cases} 3x = 2y \\ 2(x+2) - y = 6 \end{cases}$$

$\Rightarrow$

$$\begin{cases} 3x - 2y = 0 \\ 2x - y = 2 \end{cases}$$

$$\textcircled{y = 2x - 2}$$

$$3x - 2(2x - 2) = 0$$

$$3x - 4x + 4 = 0$$

$$-x + 4 = 0$$

$$\textcircled{x = 4}$$

$$\textcircled{y = 6}$$

$$10. \quad \textcircled{a} \quad \begin{cases} (x+1)^2 + 3y = x^2 - 4 \\ 3x + (y-1)^2 = y^2 \end{cases}$$

$$\begin{cases} \cancel{x^2} + 2x + 1 + 3y = \cancel{x^2} - 4 \\ 3x + \cancel{y^2} - 2y + 1 = \cancel{y^2} \end{cases}$$

$$\begin{cases} 2x + 3y = -5 \\ 3x - 2y + 1 = 0 \end{cases} \Rightarrow \begin{cases} 2x + 3y = -5 \\ 3x - 2y = -1 \end{cases}$$

$$D = \begin{vmatrix} 2 & 3 \\ 3 & -2 \end{vmatrix} = -4 - 9 = -13$$

$$D_x = \begin{vmatrix} -5 & 3 \\ -1 & -2 \end{vmatrix} = 10 + 3 = 13$$

$$D_y = \begin{vmatrix} 2 & -5 \\ 3 & -1 \end{vmatrix} = -2 + 15 = 13$$

$$x = \frac{D_x}{D} = \frac{13}{-13} = -1 \quad y = \frac{D_y}{D} = \frac{13}{-13} = -1$$

29. Мадытлэх

Орала 8y

$$\begin{cases} y + g = x \\ \frac{x}{2} = y - 8 \end{cases}$$

к т л.

13. $\varepsilon_1 \Leftrightarrow x+y=3$

$\varepsilon_2 \Leftrightarrow x-y=1$

$\varepsilon_3 \Leftrightarrow x-ky=k+1$

$$\begin{cases} x+y=3 \\ x-y=1 \end{cases} \oplus \quad 2x=4 \quad \underline{\underline{x=2}}$$

$$\downarrow$$
$$2-y=1$$

$$\underline{\underline{y=1}}$$

$$A(2,1)$$

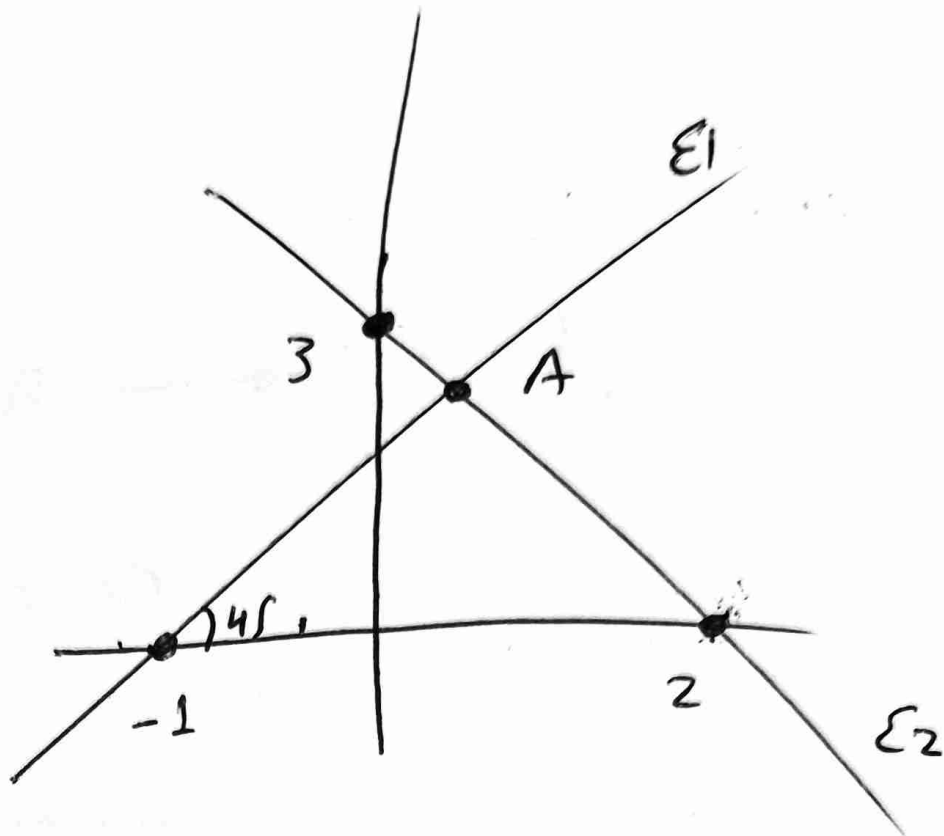
$$2 - k \cdot 1 = k+1$$

$$2 - k = k+1$$

$$1 = 2k$$

$$\underline{\underline{k = \frac{1}{2}}}$$

15.



$\underline{E_2}$

$$y = \alpha x + \beta$$

$\nearrow (2, 0)$
 $\searrow (0, 3)$

$$\begin{cases} 0 = 2\alpha + \beta & \longrightarrow & 0 = 2\alpha + 3 \\ 3 = \alpha \cdot 0 + \beta & \Rightarrow & \underline{\underline{\beta = 3}} \end{cases}$$

$$\alpha = \underline{\underline{-\frac{3}{2}}}$$

$$\boxed{y = -\frac{3}{2}x + 3}$$

$\Sigma 1$

$$y = ax + b \longrightarrow (-1, 0),$$

$$\left\{ \begin{array}{l} \Sigma 45 = a \\ 1 = a \end{array} \right.$$

$$\underline{\underline{1 = a}}$$

$$y = x + b \longrightarrow (-1, 0)$$

$$0 = -1 + b$$

$$b = 1$$

$$\Sigma 1 \ni y = x + 1$$

$$\left\{ \begin{array}{l} y = x + 1 \\ y = -\frac{3}{2}x + 3 \end{array} \right.$$

$$y = \frac{9}{5}$$

$$x + 1 = -\frac{3}{2}x + 3$$

$$2x + 2 = -3x + 6$$

$$5x = 4$$

$$x = \frac{4}{5}$$

16. a) Σ
 $y = ax + b$

$A(2, -3)$
 $B(-2, 5)$

$$\begin{cases} -3 = 2a + b \\ 5 = -2a + b \end{cases} \textcircled{+}$$

$$2 = 2b$$

$$\underline{\underline{b = 1}}$$

$$5 = -2a + 1$$

$$2a = -4$$

$$\underline{\underline{a = -2}}$$

$$\boxed{\Sigma: y = -2x + 1}$$

b) $\exists // \Sigma$

$$y = ax + b \rightarrow (0, -1)$$

$$\underline{\underline{a = -2}}$$

$$-1 = -2 \cdot 0 + b$$

$$b = -1$$

$$\textcircled{y = -2x - 1}$$

1. Να βρεθεί η εξίσωση της ευθείας ε η οποία διέρχεται από τα $A(-1, 2)$ και $B(1, -2)$.

2. Να βρεθεί η ευθεία ε η οποία είναι παράλληλη στην $\Gamma: 2x - 4y - 1 = 0$ και τέμνει τον $x'x$ στο 7 .

3. Να βρεθεί η ευθεία ε η οποία σχηματίζει γωνία 135° με τον $x'x$ και τέμνει τον $y'y$ στο -2 .

Λυσή

1.

$$\begin{array}{c} \varepsilon \\ \hline y = \alpha x + \beta \end{array} \begin{array}{l} \nearrow A(-1, 2) \\ \searrow B(1, -2) \end{array}$$

$$\begin{cases} 2 = -\alpha + \beta \\ -2 = \alpha + \beta \end{cases} \quad (+)$$
$$\longrightarrow -2 = \alpha + 0$$

$$0 = 2\beta$$

$$\underline{\underline{\beta = 0}}$$

$$\underline{\underline{\alpha = -2}}$$

$$\varepsilon \ni y = -2x$$

2.

$$\begin{array}{c} \varepsilon \\ \hline y = \alpha x + \beta \end{array} \quad // \quad \mathcal{I} \ni 2x - 4y - 1 = 0,$$

$$-4y = -2x + 1$$

$$y = \frac{-2x}{-4} - \frac{1}{4}$$

$$y = \frac{1}{2}x - \frac{1}{2}$$

$\nearrow (7, 0)$

$$0 = \frac{1}{2} \cdot 7 + \beta$$

$$\underline{\underline{\beta = -\frac{7}{2}}}$$

$$\varepsilon \ni y = \frac{1}{2}x - \frac{7}{2}$$

3.

$$\frac{\Sigma}{y = \alpha x + \beta}$$

$$\alpha = \Sigma \varphi(3)$$

$$\underline{\underline{\alpha = -1}}$$

$$A(0, -2)$$

$$-2 = \alpha \cdot 0 + \beta$$

$$\underline{\underline{\beta = -2}}$$

$$\Sigma \ni y = -x - 2$$

Μια ευθεία μπορεί να τη δώ
με 2 ποσά.

π.χ

$$4x - 3y = 7$$

Λύνω ως προς y

$$-3y = -4x + 7$$

$$y = \frac{4}{3}x - \frac{7}{3}$$

$$\lambda = \frac{4}{3}$$

$$\lambda = -\frac{4}{-3} = \frac{4}{3}$$

Γενικαγωγή

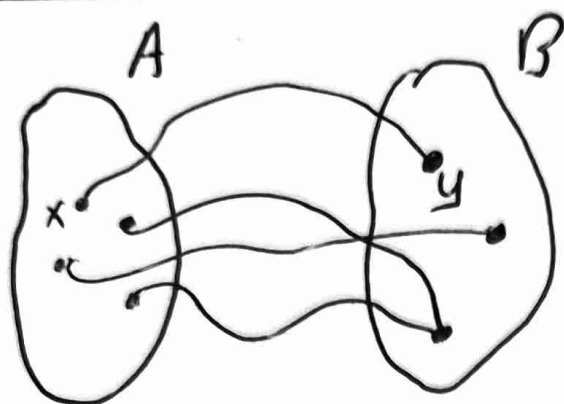
$$\varepsilon \ni y = ax + b$$

$$\lambda_{\varepsilon} = 0$$

$$\varepsilon \ni ax + by = \gamma$$

$$\lambda_{\varepsilon} = -\frac{a}{b},$$

Συναρτήσεις



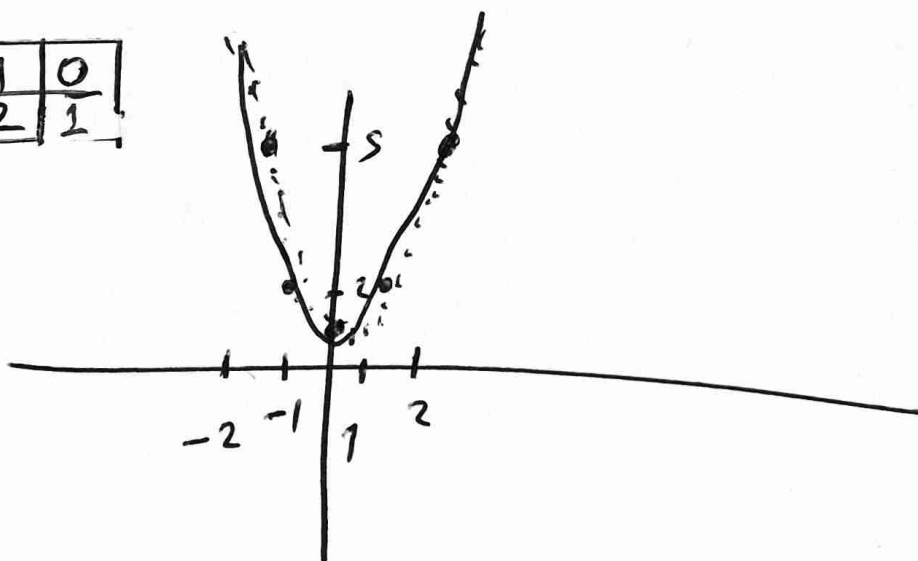
Είναι μια διαδικασία αντιστοίχισης τιμών.

π.χ

$$f(x) = x^2 + 1$$

x	-2	2	-1	1	0
y	5	5	2	2	1

$$(-2, 5) (2, 5) (-1, 2) (1, 2) (0, 1)$$



Περιορισμοί

$$\frac{1}{x} \quad \text{πρσν} \quad x \neq 0$$

$$\sqrt{x} \quad \text{πρσν} \quad x \geq 0$$

$$\frac{1}{\sqrt{x}} \quad \text{πρσν} \quad x > 0$$

$$\underline{\underline{n.x}} \quad f(x) = \sqrt{x^2 - 1}$$

$$\text{πρσν} \quad x^2 - 1 \geq 0$$

x	-1	1
$x^2 - 1$	+	-

$$D_f = A_f = (-\infty, -1] \cup [1, +\infty)$$

Πεδω ορισμν,

Επορω Μαθημα

2

(2)

(5)

(7) ,

(11)

(12) ,

(14) .