

1.39
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$$\begin{cases} (m+3)s + 2t = 0 \\ 2ms + t = 9 - 3m \end{cases}$$

$$\begin{cases} s = x_1 + x_2 \\ t = x_1 \cdot x_2 \end{cases} \quad (10)$$

$$\begin{cases} t = \frac{(m+3)s}{2} \\ t = 9 - 3m - 2ms \end{cases}$$

$$\frac{-(m+3)s}{2} = 9 - 3m - 2ms \quad | \cdot 2$$

$$-(m+3)s = 18 - 6m - 4ms$$

$$s(-m-3+4m) = 18-6m$$

$$s = \frac{18-6m}{3m-3} = \frac{6(3-m)}{3(m-1)} = \frac{2(3-m)}{m-1}$$

$$t = -\frac{(m+3) \cdot 2(3-m)}{2(m-1)} = \frac{m^2-9}{m-1}$$

$$x^2 - \frac{2(3-m)}{m-1}x + \frac{m^2-9}{m-1} = 0 \quad (11) \quad \text{המשוואה תמיד תהיה נכונה}$$

$$(m-1)x^2 - 2(3-m)x + m^2 - 9 = 0$$

(P)

$$\Delta > 0, \quad \frac{-b}{a} < 0, \quad \frac{c}{a} > 0 \quad \text{אילו קיים פתרון?}$$

$$0 < [-2(3-m)]^2 - 4(m-1)(m^2-9)$$

$\Delta > 0$

$$0 < 4(3-m)^2 - 4(m-1)(m-3)(m+3)$$

$$0 < 4(m-3) [m-3 - (m-1)(m+3)]$$

$$0 < 4(m-3)(-m^2-m) = 4(m-3)(-m)(m+1)$$

$$\begin{array}{c} + \\ -1 \quad - \quad 0 \quad + \\ -1 \quad 3 \end{array}$$

$$m < 1 \quad \text{or} \quad m > 3$$

$$\begin{array}{c} + \\ -1 \quad 3 \end{array}$$

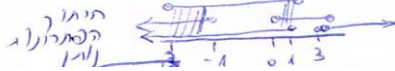
$$m < -1 \quad \text{or} \quad 0 < m < 3$$

$$\frac{2(3-m)}{m-1} < 0 \quad \frac{-b}{a} < 0$$

$$\frac{m^2-9}{m-1} > 0 \quad \frac{c}{a} > 0$$

$$-3 < m < 1 \quad \text{or} \quad m > 3$$

$$\begin{array}{c} + \\ -3 \quad 1 \quad 3 \end{array}$$



$$\boxed{-3 < m < 1} \quad \text{or} \quad \boxed{1 < m < 3}$$