

$$1. \log_2 \frac{8}{2} \cdot (m-1) \log_2^2 x - (m-3) \log_2 x^2 + m^2 - 9 = 0$$

(10)

$$1 < x_1 x_2 < 2 \quad \text{לפי ה-1, הנתון 2}$$

$$\log_2 1 < \log_2(x_1 x_2) < \log_2 2 \quad \text{כלומר הנתון } \log_2 x = t \quad \text{אז } \log_2 x_1 + \log_2 x_2 = 2t$$

$$0 < \log_2 x_1 + \log_2 x_2 < 1 \rightarrow 0 < t_1 + t_2 < 1$$

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

$$0 < \Delta = 4(m-3)^2 - 4(m-1)(m^2-9) = 4(m-3)[m-3 - (m-1)(m+3)] = 4(m-3)(-m^2-m)$$

$$0 < t_1 + t_2 < 1 \rightarrow 0 < -\frac{b}{a} < 1$$

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

$$\boxed{m > 3}$$

$$\boxed{m < 1}$$

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

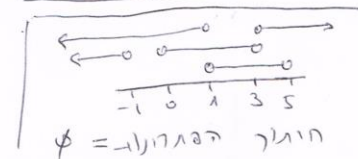
$$0 > \frac{2m-6-m+1}{m-1} = \frac{m-5}{m-1}$$

$$\boxed{1 < m < 5}$$

$$\begin{array}{c} + \\ -1 \quad - \\ 1 \quad 5 \end{array}$$

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

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



1

$$m=1$$

מקרה פרטי

$$-(1-3) \log_2 x^2 + 1 = 9$$

$$-2 \log_2 x^2 = 8$$

$$\log_2 x^2 = -4$$

$$x^2 = 2^{-4} = \frac{1}{16}$$

כלומר, כלומר

$$-1 < m < 0$$

$$m > 3$$

$$\underline{\Delta < 0}$$