

1.79
כ"א

I $2mx^4 - (3m-1)x^2 + m = 0$
 $x^2 = t$

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

פירוש אמצעות אי-שוויון 2-ערכי

$0 < \Delta = 9m^2 - 6m + 1 - 8m^2 = m^2 - 6m + 1$

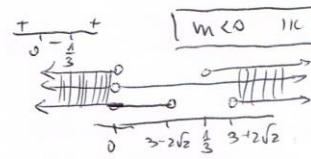


$m < 3 - 2\sqrt{2} \quad \text{or} \quad m > 3 + 2\sqrt{2}$

$0 < \frac{c}{a} = \frac{m}{2m} = \frac{1}{2} \rightarrow m > 0$

$0 < -\frac{b}{a} = \frac{3m-1}{2m}$

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

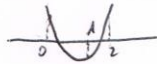


מימין ומשמאל

$m < 0 \quad \text{or} \quad m > 3 + 2\sqrt{2}$

II $0 < x_1 < 1 \rightarrow 0 < x_1^2 = t < 1$

$1 < x_2 < \sqrt{2} \rightarrow 1 < x_2^2 = t < 2$



$1 < t < 2, 0 < t < 1$ (פירוש)

$0 < f(2) = 8 - \frac{6m-2}{m} + 1 = \frac{3m+2}{m}$

$2t^2 - \frac{3m-1}{m}t + 1 = 0$

מימין ומשמאל

$\frac{1}{2} < 0 < 1$
 $m > 0 \quad \text{or} \quad m < -\frac{2}{3}$

$0 < f(0) = 1 \rightarrow m > 0$

$0 > f(1) = 2 - \frac{3m-1}{m} + 1 = \frac{1}{m} \quad m < 0$

$m < -\frac{2}{3}$ מימין ומשמאל