

0.47
3

$\Delta \geq 0$ הרי

(10)

$$x^2 + (2m+1)x + m - 5 = 0$$

$$\Delta = (2m+1)^2 - 4(m-5) = 4m^2 + 4m + 1 - 4m + 20 = 4m^2 + 21 > 0$$

(11)

$$x_1^2 - x_2, x_2^2 - x_1 \quad \text{הכנסים למשוואה במשתנה אחד}$$

$$\begin{aligned} \frac{b}{a} &= x_1^2 - x_2 + x_2^2 - x_1 = x_1^2 + x_2^2 - (x_1 + x_2) = \text{! פירוש ה b} \\ &= (x_1 + x_2)^2 - 2x_1x_2 - (x_1 + x_2) = (2m+1)^2 - 2(m-5) - (-(2m+1)) = \\ &= 4m^2 + 4m + 1 - 2m + 10 + 2m + 1 = 4m^2 + 4m + 12 \end{aligned}$$

$$(x_1^2 - x_2)(x_2^2 - x_1) = \text{! פירוש ה a}$$

$$x_1^2 x_2^2 - x_1^3 - x_2^3 + x_1 x_2 = (x_1 x_2)^2 - (x_1^3 + x_2^3) + x_1 x_2 =$$

$$= (x_1 x_2)^2 - (x_1 + x_2)(x_1^2 + x_1 x_2 + x_2^2) + x_1 x_2 =$$

$$= (x_1 x_2)^2 - (x_1 + x_2)[(x_1 + x_2)^2 - 3x_1 x_2] + x_1 x_2 =$$

$$= (m-5)^2 - (-(2m+1))[-(2m+1)^2 - 3(m-5)] + m-5 =$$

$$= (m-5)^2 + (2m+1)(4m^2 + 4m + 1 - 3m + 15) + m - 5 =$$

$$= (m-5)^2 + (2m+1)(4m^2 + m + 16) + m - 5 =$$

$$= m^2 - 10m + 25 + 8m^3 + 4m^2 + 2m^2 + m + 32m + 16 + m - 5 =$$

$$= 8m^3 - 7m^2 + 24m - 36$$

הצבת המשוואה

$$x^2 + x(4m^2 + 4m + 12) + 8m^3 - 7m^2 + 24m - 36 = 0$$