

0.35
3

$$\begin{cases} (m-1)x + y = m \\ 3x + (m+1)y = 5m-4 \end{cases}$$

דטרמיננט

$$\Delta = \begin{vmatrix} m-1 & 1 \\ 3 & m+1 \end{vmatrix} = m^2 - 1 - 3 = m^2 - 4 = (m-2)(m+2)$$

$m \neq \pm 2 \leftarrow$ ש"ש שמתקיים במתן ומובא הפה"ש

$$\Delta_x = \begin{vmatrix} m & 1 \\ 5m-4 & m+1 \end{vmatrix} = m^2 + m - 5m + 4 = m^2 - 4m + 4 = (m-2)^2$$

$$\Delta_y = \begin{vmatrix} m-1 & m \\ 3 & 5m-4 \end{vmatrix} = 5m^2 - 4m + 4 - 3m = 5m^2 - 12m + 4 = (m-2)(5m+2)$$

$$x = \frac{\Delta_x}{\Delta} = \frac{(m-2)^2}{(m-2)(m+2)} = \frac{m-2}{m+2}$$

$$y = \frac{\Delta_y}{\Delta} = \frac{(m-2)(5m+2)}{(m-2)(m+2)} = \frac{5m+2}{m+2}$$

מתקן כריבוע הראשון מתקיים $x \geq 0$ $y \geq 0$

$$0 < \frac{m-2}{m+2} \quad \frac{+}{-2} \frac{+}{-2} \quad \boxed{\begin{matrix} m \geq 2 \\ m < -2 \end{matrix}}$$

$$0 < \frac{5m+2}{m+2} \quad \frac{+}{-2} \frac{+}{+2} \quad \boxed{\begin{matrix} m > +\frac{2}{5} \\ m < -2 \end{matrix}}$$

$y = x^2 + 3x \rightarrow$ כפוף / פה"ש ראשון / פה"ש שני

$$\frac{5m-2}{m+2} < \left(\frac{m-2}{m+2}\right)^2 + 3\left(\frac{m-2}{m+2}\right) - 1$$

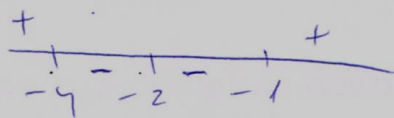
$$0 < \left(\frac{m-2}{m+2}\right)^2 + \frac{3m-6-5m+2-1}{m+2}$$

$$0 < \frac{m^2-4m+4}{m^2+4m+4} + \frac{-9m-18}{m+2} = \frac{m^2-4m+4}{m^2+4m+4} - 9 \cdot \frac{m+2}{m+2}$$

$$0 < \frac{m^2-4m+4-9m^2-36m-36}{(m+2)^2} = \frac{-8m^2-40m-32}{(m+2)^2}$$

$$0 < -8 \cdot \frac{m^2+5m+4}{(m+2)^2} = -8 \frac{(m+4)(m+1)}{(m+2)^2}$$

$$0 > \frac{(m+4)(m+1)}{(m+2)^2}$$



$$\boxed{-4 < m < -1}$$
$$m \neq -2$$

$$-4 < m < -2$$

✓/✓ -1, 2, 3 ✓/✓