

(1)

פתרון בתנאי באמצעות, לאורך 05

חוקיית מערכת משוואות

ובתנאי א' - שוויון ע"י "C" - הנחל.

$$\begin{aligned} (-6) \cdot / & \left\{ \begin{aligned} (m-4)x + (m-2)y &= m-3 \quad (1) \\ (m-3)x + 6y &= m-1 \end{aligned} \right. \\ (m-2) \cdot / & \left\{ \begin{aligned} (m-4)x + (m-2)y &= m-3 \\ (m-3)x + 6y &= m-1 \end{aligned} \right. \end{aligned}$$

$$\begin{cases} -6(m-4)x - 6(m-2)y = -6(m-3) \\ (m-2)(m-3)x + 6(m-2)y = (m-1)(m-2) \end{cases}$$

$$-6(m-4)x + (m-2)(m-3)x = -6(m-3) + (m-1)(m-2)$$

$$x \cdot (-6m + 24 + m^2 - 5m + 6) = -6m + 18 + m^2 - 3m + 2$$

$$x \cdot (m^2 - 11m + 30) = m^2 - 9m + 20$$

$$x = \frac{m^2 - 9m + 20}{m^2 - 11m + 30}$$

$$m^2 - 11m + 30 \neq 0$$

(1) בתנאי א' ובתנאי ב' ח' ב' :

$$m \neq \frac{11 \pm 1}{2} \quad (6)$$

$$(2) \text{ בתנאי א' } \underline{\underline{m=6}} : \underline{\underline{m=6}} \quad (5) \quad (3) \text{ בתנאי ב' } \underline{\underline{m=5}} \quad (4)$$

(2)

② הצגת הפונקציה בצורה של פולינום:

$$X = \frac{m^2 - 9m + 20}{m^2 - 11m + 30} = \frac{\cancel{(m-5)}(m-4)}{\cancel{(m-5)}(m-6)}$$

$$\boxed{X = \frac{m-4}{m-6}}$$

$$(m-3) \cdot \frac{m-4}{m-6} + by = m-1$$

$$\frac{m^2 - 7m + 12}{m-6} + by = m-1$$

$$by = \frac{m-1}{1} - \frac{m^2 - 7m + 12}{m-6}$$

$$by = \frac{\cancel{m-6}}{1} - \frac{m^2 - 7m + 12}{m-6}$$

$$by = \frac{\cancel{m^2} - \cancel{7m} + 6 - \cancel{m^2} + \cancel{7m} - 12}{m-6}$$

$$by = \frac{-6}{m-6} \quad / :6$$

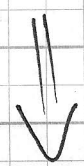
$$\boxed{\left(\frac{m-4}{m-6}, \frac{-1}{m-6} \right)}$$

$$\boxed{y = \frac{-1}{m-6}}$$

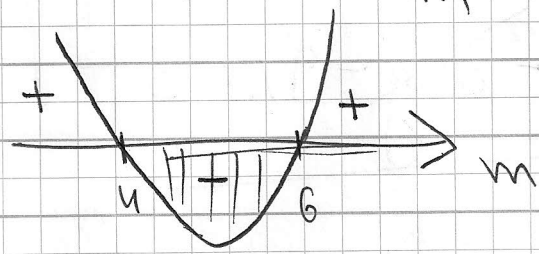
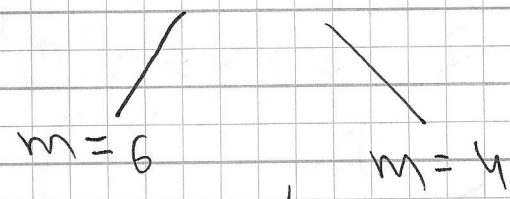
3

$$x < 0$$

2



$$\frac{m-4}{m-6} < 0$$



$$4 < m < 6$$

המחלקה אינה אפס:
- נקודות 4 ו-6
- ב' 4 ו-6
- אותיות 6
ומכאן נקבע
התוצאה!

$$\begin{cases} 3y + ax = 1 \quad / \cdot a \\ ay + 3x = -1 \quad / \cdot (-3) \end{cases}$$

(2)

$$\begin{cases} \cancel{3ay} + a^2x = a \\ -\cancel{3ay} - 9x = 3 \end{cases}$$

$$a^2x - 9x = a + 3$$

$$x \cdot (a^2 - 9) = a + 3$$

$$x = \frac{a+3}{a^2-9}$$

(10) הישרים נחתכים בקודקוד אחד

\Leftrightarrow

התנאי לפתרון יחיד:

$$a^2 - 9 \neq 0$$

$$a^2 \neq 9$$

$$\begin{cases} a \neq 3 \\ a \neq -3 \end{cases}$$

(5)

$$x = \frac{\cancel{a+3}}{\cancel{(a+3)}(a-3)}$$

$$\boxed{x = \frac{1}{a-3}}$$

$$ay + 3 \cdot \frac{1}{a-3} = -1$$

$$ay = -1 - \frac{3}{a-3}$$

$$ay = \frac{-a + \cancel{3} - \cancel{3}}{a-3}$$

$$ay = \frac{-a}{a-3} \quad | : a$$

$$\boxed{y = \frac{-1}{a-3}}$$

$$\boxed{\left(\frac{1}{a-3}, \frac{-1}{a-3} \right)}$$

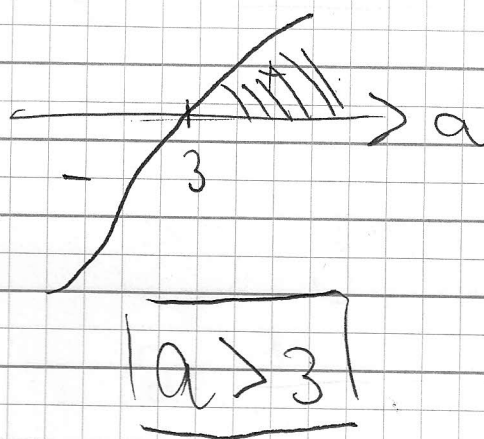
$$\frac{0 \neq 1}{\left\{ \begin{array}{l} x > 0 \\ y > -3 \end{array} \right.} \quad (2)$$

6

$$\frac{1}{a-3} > 0 \quad \text{or}$$

$a=3$

$1=0$
 \emptyset



$$\frac{-1}{a-3} > -3$$

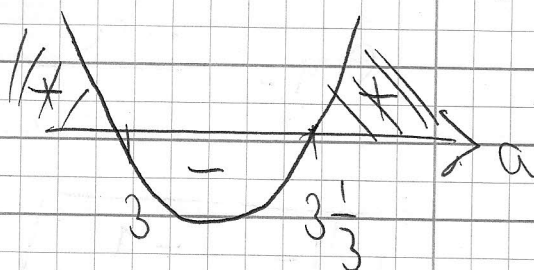
$$\frac{-1}{a-3} + 3 > 0$$

$$\frac{-1 + 3a - 9}{a-3} > 0$$

$$\frac{3a-10}{a-3} > 0$$

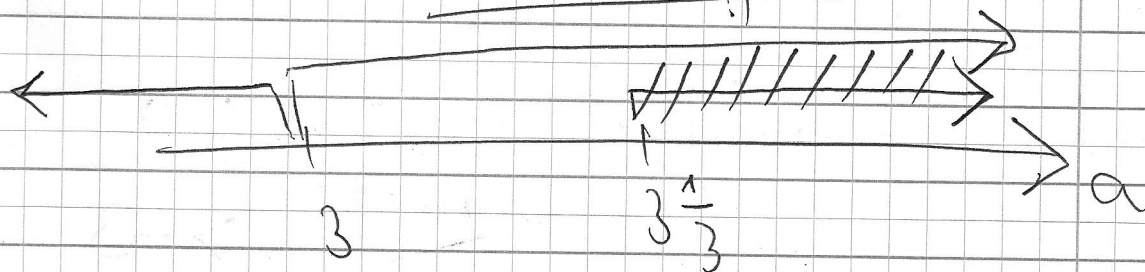
$a=3$

$a=3\frac{1}{3}$



$$a < 3, \quad a > 3\frac{1}{3}$$

חיתוך תנאים:



$$a > 3\frac{1}{3} \quad \text{תשובה סופית}$$

(7)

$$\begin{cases} 2x - y = 1 \quad | \cdot m \\ (m^2 + 1)x + my = 1 \end{cases}$$

(3)

$$\begin{cases} 2mx - my = m \\ (m^2 + 1)x + my = 1 \end{cases}$$

$$2mx + (m^2 + 1)x = m + 1$$

$$x \cdot (m^2 + 2m + 1) = m + 1$$

$$x = \frac{m + 1}{m^2 + 2m + 1}$$

? 3. m. $m^2 + 2m + 1 \neq 0$ (10)

$$m^2 + 2m + 1 \neq 0$$

$$m \neq \frac{-2 \pm 0}{2} \neq -1$$

$$\boxed{m \neq -1}$$

8

2

$$y > -6 \cdot x + 3$$

↓

?

↓

?

$$x = \frac{m+1}{(\cancel{m+1})(m+1)} = \boxed{\frac{1}{m+1}}$$

$$2x - y = 1$$

$$2 \cdot \frac{1}{m+1} - y = 1$$

$$-y = 1 - \frac{2}{m+1}$$

$$-y = \frac{m+1-2}{m+1}$$

$$-y = \frac{m-1}{m+1} \quad | : (-1)$$

$$\boxed{y = \frac{1-m}{1+m}}$$

$$\boxed{\left(\frac{1}{1+m}, \frac{1-m}{1+m} \right)}$$

(9)

(2/3)

$$\frac{1-m}{1+m} > -6 \cdot \frac{1}{1+m} + 3$$

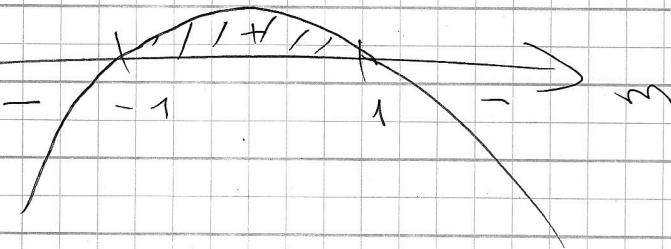
$$\frac{1-m}{1+m} + \frac{6}{1+m} - 3 > 0$$

$$\frac{1-m+6-3-3m}{1+m} > 0$$

$$\frac{-4m+4}{1+m} > 0$$

$$m = 1$$

$$m = -1$$



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

(10)

(4)

$$\begin{cases} (m-2)x + 4my = 5 - x \\ (m-1)x + 2my = 3 \end{cases}$$

$$(m-2)x + x + 4my = 5$$

$$\begin{cases} \cancel{x} \cdot \cancel{(m-1)} + 4my = 5 \\ \cancel{x} \cdot \cancel{(m-1)} + 2my = 3 \end{cases}$$

$$2my = 2$$

$$my = 1$$

$$\boxed{y = \frac{1}{m}}$$

$$(m-2)x + 4m \cdot \frac{1}{m} = 5 - x$$

$$(m-1)x + 4 = 5$$

$$(m-1)x = 1$$

$$\boxed{x = \frac{1}{m-1}}$$

$$m \neq 0$$

$$m \neq 1$$

$$m = 0$$

$$m = 1$$

א. התנאי בהתקין מ.י.:

ב. התנאי לא בהתקין:

ג. התנאי לא בהתקין:

(11)

המשפט 4

הוכחה:

$$\left(\frac{1}{m-1}, \frac{1}{m} \right)$$

$$x > y$$

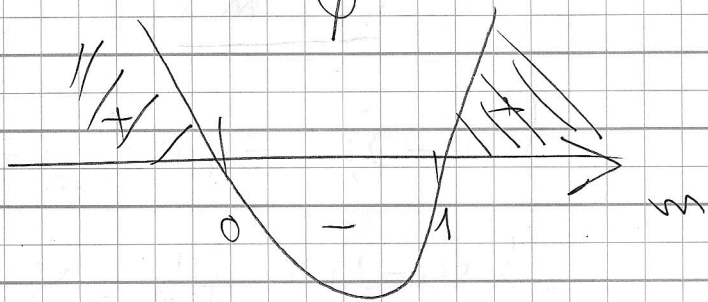
$$\frac{1}{m-1} - \frac{1}{m} > 0$$

$$\frac{\cancel{m} - \cancel{m} + 1}{m(m-1)} > 0$$

$$1 = 0$$

\emptyset

$$m = 0$$
$$m = 1$$



$$m < 0, \quad m > 1$$