

1.90

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

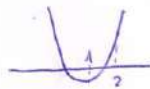
$$x^2 + \frac{m+1}{m}x + \frac{m-3}{m} = 0$$

(A) (B) $m \neq 0$

$$|f(1) < 0|$$

$$1 + \frac{m+1}{m} + \frac{m-3}{m} < 0$$

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



$$\begin{array}{c} + \\ 0 - \frac{2}{3} + \end{array}$$

$$|0 < m < \frac{2}{3}|$$

$$|f(2) > 0|$$

$$4 + \frac{m+1}{m} \cdot 2 + \frac{m-3}{m} > 0$$

$$0 < \frac{4m+2m+2+m-3}{m} = \frac{7m-1}{m}$$

$$\begin{array}{c} + \\ 0 - \frac{1}{7} + \end{array}$$

$$|m < 0 \text{ or } m > \frac{1}{7}|$$

: $m < 0$ or $m > \frac{1}{7}$

$$|\frac{1}{7} < m < \frac{2}{3}|$$

$$\textcircled{3} \quad 0 > \frac{x_1 x_2}{1+x_1^2+x_2^2} = \frac{x_1 x_2}{1+(x_1+x_2)^2-2x_1 x_2} = \frac{\frac{m-3}{m}}{1+(\frac{m+1}{m})^2 - \frac{2}{m}} = \frac{\frac{m-3}{m}}{1+(\frac{m+1}{m})^2 + \frac{m-3}{m}}$$

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

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

$$|0 < m < 3|$$

(od) $m=0$

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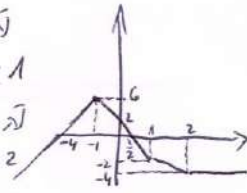
⊙ $|2-x| - 3|x+1| + |x-1| + x + 2 = -m$
 למצוא את המינימום של פונקציה זו

$y = 2 - x - 3(x+1) - (x-1) + x + 2 =$ $x \leq -1$
 $y = 2x + 8$ $(-2, 4) \quad (-1, 6)$ נתיב

$y = 2 - x - 3(x+1) - (x-1) + x + 2 =$ $-1 \leq x \leq 1$
 $y = -4x + 2$ $(1, -2) \quad (-1, 6)$ נתיב

$y = 2 - x - 3(x+1) + x - 1 + x + 2 =$ $1 \leq x \leq 2$
 $y = -2x$ $(2, -4) \quad (1, -2)$ נתיב

$y = -(2-x) - 3(x+1) + x - 1 + x + 2 =$ $x \geq 2$
 $y = -4$



⊙ (m) $\begin{cases} m \geq 4, m = -6 & \text{אם } x < -1 \\ -6 < m < 4 & \text{אם } -1 \leq x \leq 1 \\ m = 4 & \text{אם } 1 < x \leq 2 \\ m \leq -6 & \text{אם } x > 2 \end{cases}$

$$\begin{array}{r} 1.90 \\ 103 \\ \hline \end{array}$$

I 12 האיבר בסדר הנשאל
 הפרש הסדרה זכום ולכן הפרש
 סדרה הוא $12 = 12 - 0$

$$12, 24, 36, \dots$$

הפרש קבוע לכן סדרה חשבונית

$$\begin{aligned} S_{50} &= \frac{50}{2} [2 \cdot 12 + 12(50-1)] \\ &= 25(12 + 51) = 15,300 \end{aligned}$$

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p3

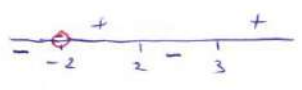
$$\frac{4}{\sqrt{x+2}} + \frac{\sqrt[3]{x+3}}{5} \geq 2$$

$\sqrt{x+2} \neq 0$ הצבה ראשונה
 $\boxed{x=-8} \leftarrow \sqrt[3]{x} \neq -2$

$$\frac{4}{A+2} + \frac{A+3}{5} \geq 2 \qquad \sqrt[3]{x}=A \quad (110)$$

$$\frac{20 + A^2 + 5A + 6 - 10A - 20}{5(A+2)} \geq 0$$

$$\frac{A^2 - 5A + 6}{5(A+2)} \geq 0$$



$$-2 < A \leq 2 \quad \text{||} \quad A \geq 3$$

$$-2 < \sqrt[3]{x} \leq 2 \quad \text{||} \quad \sqrt[3]{x} \geq 3$$

$$\boxed{-8 < x \leq 8 \quad \text{||} \quad x \geq 27}$$

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4

(12)

$$\log_{x+2} (3 - \sqrt{1-2x+x^2}) > \frac{1}{2}$$

מציאת ערכי x
 $x \in \mathbb{R} \leftarrow x^2 - 2x + 1 \geq 0$
 $3 - \sqrt{1-2x+x^2} > 0$
 $9 > x^2 - 2x + 1$
 $0 > x^2 - 2x - 8$
 $x^2 - 2x - 8 < x < 1$
 $1 \neq x+2 > 0$
 $-1 \neq x > -2$

$$\log_{x+2} (3 - \sqrt{1-2x+x^2}) > \log_{x+2} \sqrt{x+2}$$

$$(x+2-1) (\sqrt{x+2} - 3 + \sqrt{1-2x+x^2}) \leq 0$$

$x = -1$

$$-\sqrt{x+2} + 3 = \sqrt{x^2 - 2x + 1}$$

$$-\sqrt{x+2} + 3 = \sqrt{(x-1)^2}$$

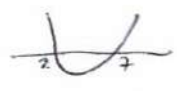
$$-\sqrt{x+2} + 3 = |x-1|$$

$$3 - \sqrt{x+2} = x-1 \quad | \text{ (A) } \quad x > 1 \quad \text{אפשר}$$

$$4 - x = \sqrt{x+2} \quad | \text{ (C) }^2$$

$$16 - 8x + x^2 = x+2$$

$$x^2 - 9x + 14 = 0$$



פירוש \rightarrow מציאת ערכי $x = 2, 7$

$$3 - \sqrt{x+2} = -x+1$$

$$2+x = \sqrt{x+2} \quad | \text{ (C) }^2$$

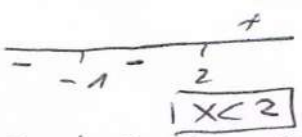
$$4+4x+x^2 = x+2$$

$$x^2+3x+2=0$$

$-2 < x < 1$
 $x \neq -1$ אפשר

$x = -2, -1$
 פירוש (אפשר) / (אפשר)

מציאת ערכי x



פירוש: מציאת ערכי x
 $-1 < x < 2$
 $-2 < x < -1$

$$\textcircled{2} \quad 4^{1+\log x} - 6^{\log x} - 2 \cdot 3^{2+\log x^2} = 0$$

$$4 \cdot 2^{2\log x} - 3^{\log x} \cdot 2^{\log x} - 2 \cdot 9 \cdot 3^{2\log x} = 0 \quad | : 3^{2\log x} \neq 0$$

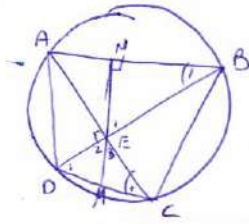
$$4 \left(\frac{2}{3}\right)^{2\log x} - \left(\frac{2}{3}\right)^{\log x} - 18 = 0$$

$$t = \left(\frac{2}{3}\right)^{\log x} \quad | \text{NO}$$

$$\frac{0 > 0 \text{ AND } 0 > 0}{|x > 0| \leftarrow \begin{matrix} x > 0 \\ x^2 > 0 \end{matrix}}$$

$$\begin{array}{l|l} t_1 = \frac{9}{4} = \left(\frac{2}{3}\right)^{-2} & t_2 = -2 \\ \left(\frac{2}{3}\right)^{\log x} = \left(\frac{2}{3}\right)^{-2} & \left(\frac{2}{3}\right)^{\log x} = -2 \\ \log x = -2 & \phi \\ \boxed{x = 0.01} & \end{array}$$

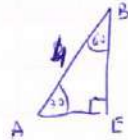
1.90
:5



(AD) $\angle B_1 = \alpha = \angle C_1$ (no) $\frac{1}{2}$
 (AD) $\angle E_1 = 90 - \alpha = \angle E_2$
 $\angle E_3 = 90 - \angle E_2 = \alpha$
 (ODEC) $\angle D_1 + \angle E_2 + \angle E_3 + \angle C_1 = 180$
 $\angle D_1 + 90 - \alpha + \alpha + \alpha = 180$
 $\angle D_1 = 90 - \alpha$
 $\rightarrow \boxed{\angle D_1 = \angle E_1}$

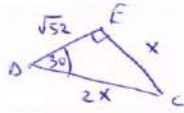
$MC = DM \Leftrightarrow EM = MC \Leftrightarrow \angle E_3 = \angle C_1$ (AD) $\frac{1}{2}$ $\frac{1}{2}$
 $EM = DM \Leftrightarrow \angle E_2 = \angle D_1$

(AD) $\angle D_1 = 30^\circ \Rightarrow \angle B_1 = 60^\circ$ $\frac{1}{2}$



$BE = 2$ (30, 60, 90) (AD) $\frac{1}{2}$
 $AE = \sqrt{2}$ (AD) $\frac{1}{2}$

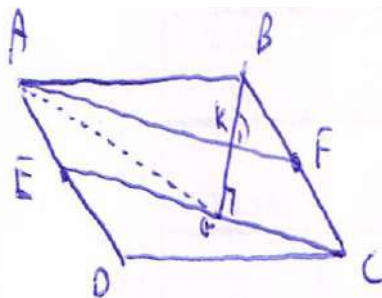
(AD) $DE = \sqrt{2}$



$4x^2 = x^2 + 52$
 $x = \sqrt{\frac{52}{3}}$

$DM = \frac{1}{2} DC = x = \sqrt{\frac{52}{3}}$

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מקבילית AFCE \Leftrightarrow

$$FC = AE$$

1.

\Downarrow
 $AF \parallel EC$

$$FC \parallel AE$$

GC - f' מקבילית BC \Rightarrow $\triangle BGC \cong \triangle BFC$ 2.

BG \perp מקבילית AF $\Leftrightarrow \triangle BGC \cong \triangle BFC \Rightarrow FK \perp AF$

מקבילית AK $\Leftrightarrow BK = GB$, $\angle EGB = 90^\circ = \angle AKB = \angle AKG \Leftrightarrow AF \parallel EC$ 3.

ע"כ $AF \parallel EC$