

10 פסוק

$$\frac{a}{a+4} - \frac{6}{a^2+5a+4} + \frac{2}{a+1}$$

$$\frac{a}{a+4} - \frac{6}{(a+4)(a+1)} + \frac{2}{a+1}$$

$$\frac{a \cdot (a+1) - 6 + 2(a+4)}{(a+4)(a+1)}$$

$$\frac{a^2 + a - 6 + 2a + 8}{(a+4)(a+1)}$$

$$\frac{a^2 + 3a + 2}{(a+4)(a+1)}$$

$$\frac{(a+1)(a+2)}{(a+4)(a+1)}$$

$$\boxed{\frac{a+2}{a+4}}$$

1100 - 2 1/2

ABC 1000000 AC 1000000 1000000 1000000 1000000 1000000

c פס

$$f(x) = (x+1)(x-a)^2 \quad \text{כ}$$

$$f(x) = (x+1)(x-a)(x-a)$$

$$f(x) = (x+1)(x^2 - 2ax + a^2)$$

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

$$f'(x) = 3x^2 + 2x - 4ax - 2a + a^2$$

$$0 = 3(1)^2 + 2(1) - 4a(1) - 2a + a^2$$

$$0 = 3 + 2 - 4a - 2a + a^2$$

$$0 = a^2 - 6a + 5$$

$$\frac{6 \pm \sqrt{36 - 4 \cdot 5 \cdot 1}}{2}$$

$$\frac{6 \pm \sqrt{16}}{2}$$

$$\frac{6 \pm 4}{2}$$

$$a_1 = 5$$

$$a_2 = 1$$

$$f(x) = (x+1)(x-1)^2 \quad \text{כ}$$

$$f(0) = (0+1)(0-1)^2$$

$$f(0) = 1$$

ב-ה פס חיתוך נ (0,1)

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

$$x+1=0 \quad | -1 \quad \text{כ}$$

$$x = -1$$

$$(x-1)^2 = 0 \quad | \sqrt{\quad} \quad \text{כ}$$

$$x-1=0 \quad | +1$$

$$x = 1$$

ב-ה פס חיתוך נ (-1,0)

$$(1,0)$$

$$f(x) = (x+1)(x-1)^2$$

$$f(x) = (x+1)(x^2 - 2x + 1)$$

$$f(x) = x^3 - 2x^2 + x + x^2 - 2x + 1$$

$$f(x) = x^3 - x^2 - x + 1$$

$$f'(x) = 3x^2 - 2x - 1$$

$$0 = 3x^2 - 2x - 1$$

$$x = \frac{2 \pm \sqrt{4 - 4 \cdot 3 \cdot (-1)}}{6}$$

$$x = \frac{2 \pm 4}{6}$$

$$x_1 = 1$$

$$x_2 = -\frac{2}{6} = -\frac{1}{3}$$

$$f(1) = (1+1)(1-1)^2$$

$$f(1) = 0$$

(Min) נקודה קריטית (1, 0)

$$f(-\frac{1}{3}) = (-\frac{1}{3}+1)(-\frac{1}{3}-1)^2$$

$$f(-\frac{1}{3}) = (\frac{2}{3}) \cdot \frac{16}{9} = \frac{32}{27}$$

(Max) נקודה קריטית $(-\frac{1}{3}, \frac{32}{27})$

$$y'' = 6x - 2$$

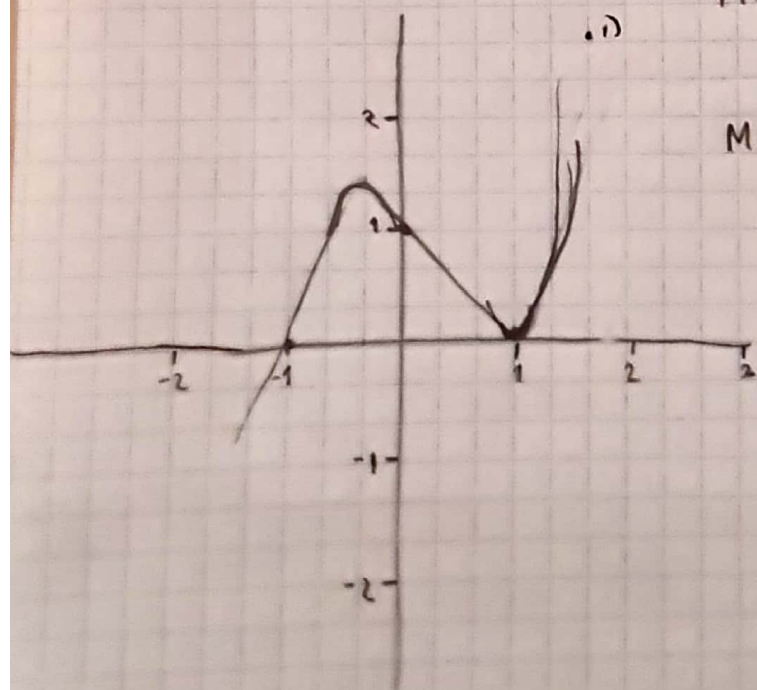
Min. $y''(1) = 6 - 2$

$$y''(-\frac{1}{3}) = -\frac{1}{3} \cdot 6 - 2$$

Max $y''(-\frac{1}{3}) = -4$

3 נקודות קריטיות: $x < -\frac{1}{3} \cup x > 1$

נקודות קריטיות: $1 > x > -\frac{1}{3}$



3 נק'ן

$$f(x) = \frac{x^2 - 6x + 13}{x - 3}$$

חישוב תחום ההגדרה

$$x - 3 = 0 \quad | +3$$

$$x = 3$$

כל תחום ההגדרה הוא:

$$x \neq 3$$

$$W(x) = x^2 - 6x + 13$$

$$G(x) = x - 3$$

$$f'(x) = \frac{(2x - 6)(x - 3) - (x^2 - 6x + 13) \cdot 1}{(x - 3)^2}$$

$$f'(x) = \frac{2x^2 - 9x + 18 - x^2 + 6x - 13}{(x - 3)^2}$$

$$f'(x) = \frac{x^2 - 3x + 5}{(x - 3)^2}$$

$$f'(x) = \frac{x^2 - 3x + 5}{x^2 - 6x + 9}$$