

∴ () y ; " () x .
 . 120 " 100 ;
 . $100x + y = 120$:

∴ () y + 4 ; " () $\frac{100-10}{100} \cdot x = 0.9x$
 . 116 " 100 ;
 . $100 \cdot 0.9x + y + 4 = 116 \rightarrow 90x + y = 112$:

:

$$\begin{cases} 100x + y = 120 \\ 90x + y = 112 \quad \cdot (-1) \end{cases}$$

$$+ \begin{cases} 100x + y = 120 \\ -90x - y = -112 \end{cases}$$

$$10x = 8 \quad / : 10$$

$$\boxed{x = 0.8}$$

$$100 \cdot 0.8 + y = 120$$

$$80 + y = 120$$

$$\boxed{y = 40}$$

$$\therefore y = 40, x = 0.8 :$$

$$, 0.9 \cdot 0.8 = 0.72 \quad ,$$

$$. 40 + 4 = 44$$

$$. 44 \quad , \quad 0.72 \quad :$$

$$. " 80$$

$$. 80 \cdot 0.8 + 40 = 104 \quad ,$$

$$. 80 \cdot 0.72 + 44 = 101.6 \quad ,$$

$$. 101.6 < 104 \quad , \quad :$$

"

$$m_{AB} = \frac{3-1}{8-2} = \frac{2}{6} = \frac{1}{3} : AB \quad (1)$$

$$\frac{1}{3} \quad AB \quad :$$

$$BC \perp AB \quad (2)$$

$$m_{BC} \cdot m_{AB} = -1 \rightarrow m_{BC} \cdot \frac{1}{3} = -1 \rightarrow m_{BC} = -3 : BC$$

$$B(8,3), m_{BC} = -3$$

$$y - 3 = -3(x - 8)$$

$$y - 3 = -3x + 24$$

$$\boxed{y = -3x + 27}$$

$$y = -3x + 27 \quad BC \quad :$$

$$y_C = 0, \quad x = \quad C \quad .$$

$$0 = -3x + 27$$

$$3x = 27$$

$$x = 9 \rightarrow \boxed{C(9, 0)}$$

$$C(9, 0) :$$

$$AD \quad E(4, 0) \quad .$$

$$0 = \frac{1 + y_D}{2} \quad / \cdot 2$$

$$4 = \frac{2 + x_D}{2} \quad / \cdot 2$$

$$0 = 1 + y_D$$

$$8 = 2 + x_D$$

$$y_D = -1$$

$$x_D = 6$$

$$D(6, -1) :$$

$$\triangle BCD$$

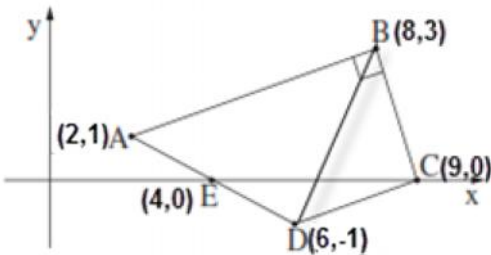
$$d_{BC} = \sqrt{(8-9)^2 + (3-0)^2} = \sqrt{10}$$

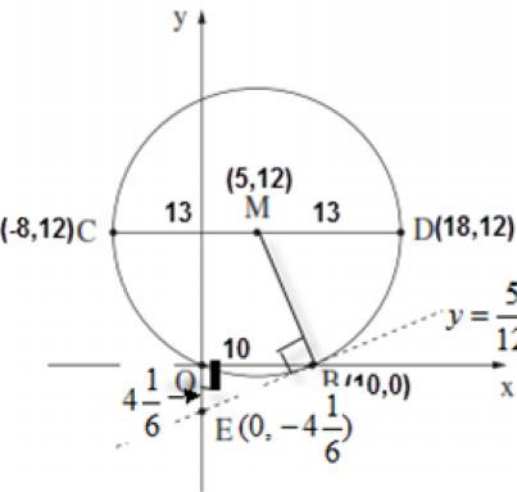
$$d_{DC} = \sqrt{(6-9)^2 + (-1-0)^2} = \sqrt{10}$$

$$BC = DC$$

$$\triangle BCD :$$

"





• R $M(5, 12)$, $(x-5)^2 + (y-12)^2 = R^2$.
 • $(0, 0)$

$$(0-5)^2 + (0-12)^2 = R^2$$

$$169 = R^2$$

$$R = 13$$

• 13 :

$$(x-5)^2 + (y-12)^2 = 169$$

• $M(5, 12)$

$x_C = x_M - 13 = 5 - 13 = -8$, $x_D = x_M + 13 = 5 + 13 = 18$: $y_D = y_C = 12$

• $C(-8, 12)$, $D(18, 12)$:

• $B(10, 0)$

• $m_{MB} = \frac{12-0}{5-10} = \frac{12}{-5} = -\frac{12}{5}$ MD

• $m_{\text{mashik}} \cdot m_{MB} = -1 \rightarrow m_{\text{mashik}} \cdot \left(-\frac{12}{5}\right) = -1 \rightarrow m_{\text{mashik}} = \frac{5}{12}$:

$B(10, 0), m_{\text{mashik}C} = \frac{5}{12}$

$$y - 0 = \frac{5}{12}(x - 10)$$

$$\boxed{y = \frac{5}{12}x - 4\frac{1}{6}}$$

• $y = \frac{5}{12}x - 4\frac{1}{6}$:

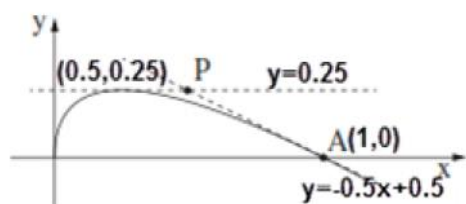
• $E(0, -4\frac{1}{6})$

$y -$ $y = \frac{5}{12}x - 4\frac{1}{6}$.

$$S_{\Delta OEB} = \frac{BO \cdot OE}{2} = \frac{10 \cdot 4\frac{1}{6}}{2} = 20\frac{5}{6}$$

• " $20\frac{5}{6}$ ΔOEB :

"



$$f(x) = \sqrt{x} - x$$

$$x \geq 0 :$$

$$f'(x) = \frac{1}{2\sqrt{x}} - 1$$

$$0 = \frac{1}{2\sqrt{x}} - 1 \quad / \cdot 2\sqrt{x}$$

$$0 = 1 - 2\sqrt{x}$$

$$2\sqrt{x} = 1$$

$$\sqrt{x} = 0.5 \quad ()^2$$

$$x = 0.25$$

$$f(0.25) = \sqrt{0.25} - 0.25 = 0.25 \quad \left. \vphantom{f(0.25)} \right\} (0.25, 0.25)$$

$$(0.25, 0.25)$$

$$x = 1$$

, A

(1)

$$f'(1) = \frac{1}{2\sqrt{1}} - 1 = -0.5 \rightarrow m = -0.5$$

$$f(1) = \sqrt{1} - 1 = 0 \rightarrow A(1, 0)$$

. A

$$A(1, 0), m = -0.5$$

$$y - 0 = -0.5(x - 1)$$

$$\boxed{y = -0.5x + 0.5}$$

$$y = -0.5x + 0.5 \quad A$$

$$(0.25, 0.25)$$

(2)

$$y = 0.25$$

.P

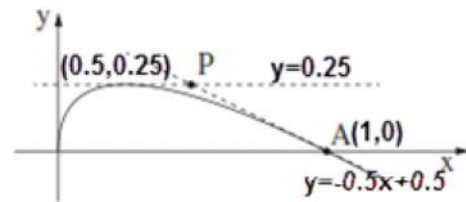
$$\begin{cases} y = -0.5x + 0.5 \\ y = 0.25 \end{cases}$$

$$-0.5x + 0.5 = 0.25$$

$$-0.5x = -0.25 \quad /: (-0.5)$$

$$x = 0.5 \rightarrow \boxed{P(0.5, 0.25)}$$

. P(0.5, 0.25) :



$$f(x) = x^2 - 4x + 4$$

, A

$$f'(x) = 2x - 4$$

$$0 = 2x - 4$$

$$-2x = -4$$

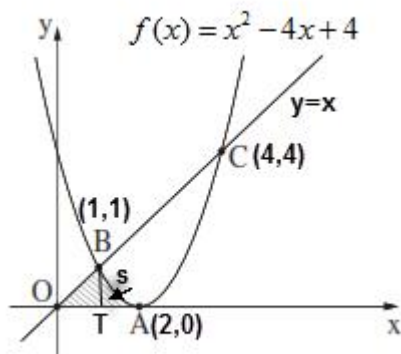
$$x = 2$$

$$f(2) = 2^2 - 4 \cdot 2 + 4 = 0 \quad \boxed{A(2, 0)}$$

. A(2, 0) :

$$y = x \quad f(x) = x^2 - 4x + 4$$

, C - B



$$\begin{cases} y = x^2 - 4x + 4 \\ y = x \end{cases}$$

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

$$x^2 - 5x + 4 = 0$$

$$x_{1,2} = \frac{-(-5) \pm \sqrt{(-5)^2 - 4 \cdot 1 \cdot 4}}{2 \cdot 1}$$

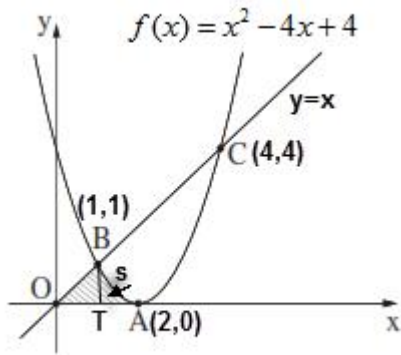
$$x_{1,2} = \frac{5 \pm 3}{2}$$

$$x_1 = \frac{5+3}{2} = \frac{8}{2} = 4 \rightarrow y = 4 \rightarrow \boxed{C(4, 4)}$$

$$x_2 = \frac{5-3}{2} = \frac{2}{2} = 1 \rightarrow y = 1 \rightarrow \boxed{B(1, 1)}$$

. C(4, 4) , B(1, 1) :

$$S_{\Delta OBT} = \frac{OT \cdot BT}{2} = \frac{1 \cdot 1}{2} = \frac{1}{2} :$$



$$S = \int_1^2 (x^2 - 4x + 4) dx$$

$$S = \left[\frac{x^3}{3} - \frac{4 \cdot x^2}{2} + 4x \right]_1^2$$

$$S = \left(\frac{2^3}{3} - \frac{4 \cdot 2^2}{2} + 4 \cdot 2 \right) - \left(\frac{1^3}{3} - \frac{4 \cdot 1^2}{2} + 4 \cdot 1 \right)$$

$$S = \frac{8}{3} - \left(\frac{7}{3} \right)$$

$$\boxed{S = \frac{1}{3}}$$

$$\frac{1}{2} + \frac{1}{3} = \frac{5}{6}$$

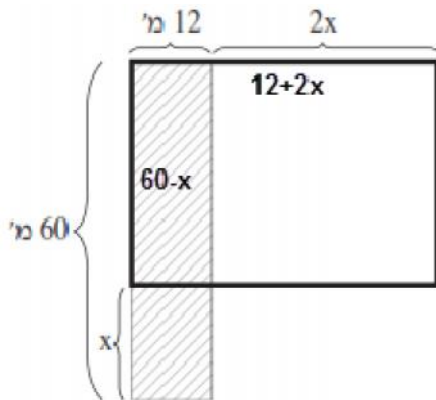
$$" \quad \frac{5}{6} :$$

$$\cdot (12+2x) \quad , \quad 2x \quad \cdot$$

$$\cdot (60-x) \quad , \quad x \quad \cdot$$

$$(12+2x)(60-x) = 720 - 12x + 120x - 2x^2 = -2x^2 + 108x + 720 :$$

$$\cdot \quad " \quad -2x^2 + 108x + 1200 \quad :$$



פונקציה

$$S(x) = -2x^2 + 108x + 720$$

$$S'(x) = -4x + 108$$

$$0 = -4x + 108$$

$$4x = 108 \quad /:4$$

$$\boxed{x = 27}$$

:

$$(S)'(26) = -4 \cdot 26 + 108 > 0, \quad (S)'(28) = -4 \cdot 28 + 108 < 0$$

26	27	28	x
+	0	-	$(S)'$
↗	Max	↘	

$$\cdot \quad , \quad x = 27 \quad :$$