

35803

15

$4 \cdot 4.4 = 17.6$
 $4 - 0.6 = 3.4$
 $3.4 \cdot 5 = 17$
 $17.6 - 17 = 0.6$
 $0.6 \div 4 = 0.15$
 $0.15 \cdot 100\% = 15\%$

25%

$$\frac{100+25}{100} \cdot 5 = 1.25 \cdot 5 = 6.25$$

(")	(")	()	
$5x$	5	x	
17.6	4.4	4	4
$6.25 \cdot (x-4)$	6.25	$x-4$	

92.6

$$17.6 + 6.25 \cdot (x-4) = 92.6$$

$$17.6 + 6.25 \cdot (x-4) = 92.6$$

$$17.6 + 6.25x - 25 = 92.6$$

$$-7.4 + 6.25x = 92.6 \quad / +7.4$$

$$6.25x = 100 \quad / : 6.25$$

$$\boxed{x = 16}$$

16

$$16 \cdot 5 = 80$$

$$92.6 - 80 = 12.6$$

12.6

$$0.1575 \cdot 100\% = 15.75\%$$

$$\frac{12.6}{92.6} = 0.1575$$

15.75%

• $(2, -5)$ A , AB D(-1, -1) .

$$\left. \begin{aligned} -1 &= \frac{x_B + 2}{2} \rightarrow -2 = x_B + 2 \rightarrow -4 = x_B \\ -1 &= \frac{y_B - 5}{2} \rightarrow -2 = y_B - 5 \rightarrow 3 = y_B \end{aligned} \right\} \boxed{B(-4, 3)}$$

• B(-4, 3) :

• -3 , $y = -3x + 1$ AC (1) .

• () $m_{BE} = \frac{1}{3}$ - $m_{BE} \cdot (-3) = -1$, BE

• $m_{BE} = \frac{1}{3}$ B(-4, 3) , BE

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

$$y - 3 = \frac{1}{3}(x + 4)$$

$$y - 3 = \frac{1}{3}x + 1\frac{1}{3} \quad / +3$$

$$\boxed{y = \frac{1}{3}x + 4\frac{1}{3}}$$

• $y = \frac{1}{3}x + 4\frac{1}{3}$ BE :

• AC BE , E (2)

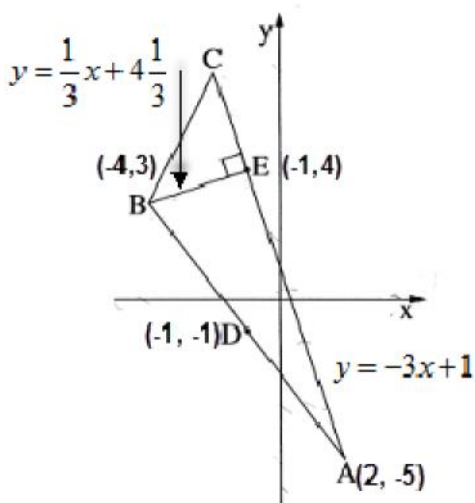
$$E \begin{cases} y = \frac{1}{3}x + 4\frac{1}{3} \\ y = -3x + 1 \end{cases}$$

$$\frac{1}{3}x + 4\frac{1}{3} = -3x + 1 \quad / +3x - 4\frac{1}{3}$$

$$3\frac{1}{3}x = -3\frac{1}{3} \quad / : (3\frac{1}{3})$$

$$x = -1 \rightarrow y = -3 \cdot (-1) + 1 = 4 \rightarrow \boxed{E(-1, 4)}$$

• E(-1, 4) :

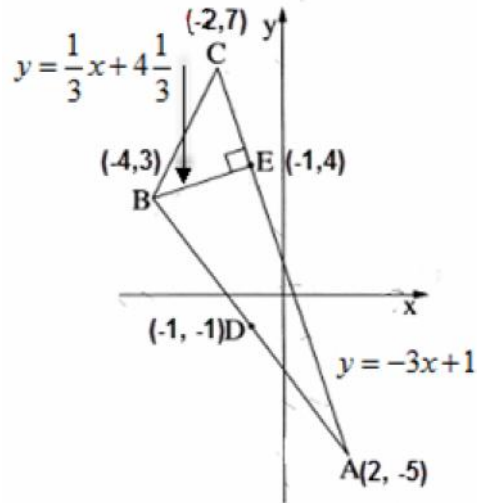


$$y = -3x + 1: AC$$

$$x_C = -2$$

$$C(-2, 7)$$

$$y_C = -3 \cdot (-2) + 1 = 7$$



$$S_{\triangle BCE} = \frac{CE \cdot BE}{2}$$

$$CE = \sqrt{(-2 - (-1))^2 + (7 - 4)^2} = \sqrt{10}$$

$$BE = \sqrt{(-4 - (-1))^2 + (3 - 4)^2} = \sqrt{10}$$

$$S_{\triangle BCE} = \frac{\sqrt{10} \cdot \sqrt{10}}{2} = 5$$

" 5 BCE :

$y = x + 9$ - $y = -x - 3$

, M

$$M \begin{cases} y = -x - 3 \\ y = x + 9 \end{cases}$$

$x + 9 = -x - 3 \quad / +x - 9$

$2x = -12 \quad / : 2$

$x = -6 \rightarrow y = -6 + 9 = 3 \rightarrow \boxed{M(-6, 3)}$

. M(-6, 3) :

. M(-6, 3)

A(-3, -1)

$R = d_{AM} = \sqrt{(-3 - (-6))^2 + (-1 - 3)^2} = 5 : \tag{1}$

5

$(x - (-6))^2 + (y - 3)^2 = 5^2 : \tag{2}$

$(x + 6)^2 + (y - 3)^2 = 25$

. C - B

x -

$y = 0$

$(x - 6)^2 + (0 - 3)^2 = 25$

$(x + 6)(x + 6) + 9 = 25$

$x^2 + 6x + 6x + 36 + 9 = 25$

$x^2 + 12x + 45 = 25 \quad / -25$

$x^2 + 12x + 20 = 0$

$x_{1,2} = \frac{-12 \pm \sqrt{12^2 - 4 \cdot 1 \cdot 20}}{2 \cdot 1}$

$x_{1,2} = \frac{-12 \pm 8}{2}$

$x_1 = \frac{-12 + 8}{2} = \frac{-4}{2} = -2 \rightarrow C(-2, 0)$

$x_2 = \frac{-12 - 8}{2} = \frac{-20}{2} = -10 \rightarrow B(-10, 0)$

. BMC

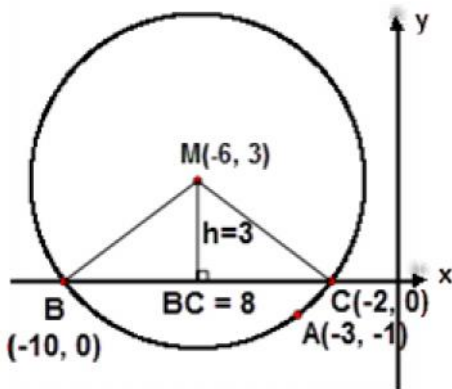
$BC = -2 - (-10) = 8, \quad h = 3 - 0 = 3$

$S_{\Delta BMC} = \frac{BC \cdot h}{2} = \frac{8 \cdot 3}{2} = 12$

. " 12

BMC

:



$$y = \frac{36}{x} + 9x + 1$$

$$x = 0 \quad x \neq 0$$

$$x \neq 0$$

$$y' = -\frac{36}{x^2} + 9$$

$$0 = -\frac{36}{x^2} + 9 \quad / \cdot x^2$$

$$0 = -36 + 9x^2$$

$$36 = 9x^2 \quad / : 9$$

$$x^2 = 4$$

$$x = 2 \rightarrow y = \frac{36}{2} + 9 \cdot 2 + 1 = 37 \rightarrow (2, 37)$$

$$x = -2 \rightarrow y = \frac{36}{-2} + 9 \cdot (-2) + 1 = -35 \rightarrow (-2, -35)$$

$$\left. \begin{array}{l} y'(1) = -\frac{36}{1^2} + 9 < 0 \\ y'(3) = -\frac{36}{3^2} + 9 > 0 \end{array} \right\} (2, 37) \text{Min}$$

$$\left. \begin{array}{l} y'(-3) = -\frac{36}{(-3)^2} + 9 > 0 \\ y'(-1) = -\frac{36}{(-1)^2} + 9 < 0 \end{array} \right\} (-2, -35) \text{Max}$$

$(-2, -35), (2, 37)$

-3	-2	-1	0	1	2	3	x
+	0	-		-	0	+	y'
↗	Max	↘		↘	Min	↗	

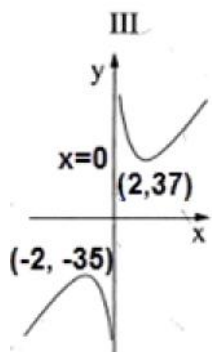
$-2 < x < 0 \quad 0 < x < 2$; $x < -2 \quad x > 2$:

$(-2, -35), (2, 37)$:

III

$x = 0$

III :

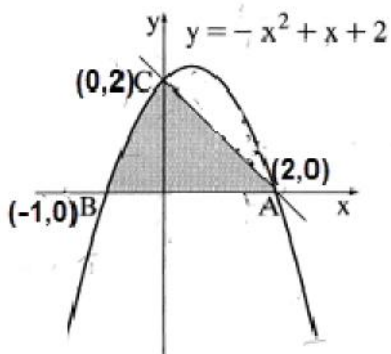


. B - A

, x -

$$y = -x^2 + x + 2$$

$$y = 0$$



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

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

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

$$x_1 = \frac{-1 + 3}{-2} = \frac{2}{-2} = -1 \rightarrow \boxed{B(-1, 0)}$$

$$x_2 = \frac{-1 - 3}{-2} = \frac{-4}{-2} = 2 \rightarrow \boxed{A(2, 0)}$$

. C(0, 2)

$$x = 0$$

C

. C(0, 2), B(-1, 0), A(2, 0):

. AC

$$m_{AC} = \frac{2-0}{0-2} = \frac{2}{-2} = -1$$

$$. m_{AC} = -1$$

A(2, 0)

, AC

$$y - 0 = -1(x - 2)$$

$$y = -x + 2 \quad o.k.$$

. :

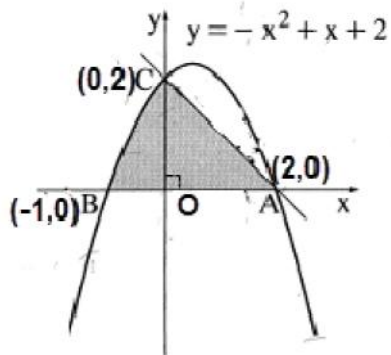
$$. y = -x + 2 :$$

$$A(2, 0): 0 = -2 + 2 \rightarrow 0 = 0 \rightarrow o.k.$$

$$C(0, 2): 2 = -0 + 2 \rightarrow 2 = 2 \rightarrow o.k.$$

$$S_{\triangle AOC} = \frac{AO \cdot CO}{2} = \frac{2 \cdot 2}{2} = 2 :$$

:



$$S = \int_{-1}^0 (-x^2 + x + 2) dx$$

$$S = \left[-\frac{x^3}{3} + \frac{x^2}{2} + 2x \right]_{-1}^0$$

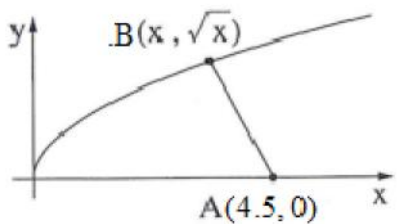
$$S = \left(-\frac{0^3}{3} + \frac{0^2}{2} + 2 \cdot 0 \right) - \left(-\frac{(-1)^3}{3} + \frac{(-1)^2}{2} + 2 \cdot (-1) \right)$$

$$S = 0 - \left(-1\frac{1}{6} \right)$$

$$\boxed{S = 1\frac{1}{6}}$$

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

$$\cdot " \quad 3\frac{1}{6} \quad :$$



. $B(x, \sqrt{x})$ $y = \sqrt{x}$ B .

. $(4.5, 0)$ x - A

. AB _____ **פונקציה**

. $(AB)^2$, AB

$(AB)^2$

$$AB = \sqrt{(x - 4.5)^2 + (\sqrt{x} - 0)^2}$$

$$(AB)^2 = (x - 4.5)^2 + (\sqrt{x})^2$$

$$(AB)^2 = (x - 4.5)(x - 4.5) + x$$

$$(AB)^2 = x^2 - 4.5x - 4.5x + 20.25 + x$$

$$\boxed{(AB)^2 = x^2 - 8x + 20.25}$$

. $(AB)^2 = x^2 - 8x + 20.25$ **פונקציה**

:

$$\boxed{((AB)^2)' = 2x - 8}$$

$$0 = 2x - 8$$

$$-2x = -8 \quad /: (-2)$$

$$x = 4 \rightarrow y = \sqrt{4} = 2 \rightarrow \boxed{B(4, 2)}$$

:

$$((AB)^2)'(3) = 2 \cdot 3 - 8 < 0, \quad ((AB)^2)'(5) = 2 \cdot 5 - 8 > 0$$

0	3	4	5	x
	-	0	+	$((AB)^2)'$
	↘	Min	↗	

. AB B(4, 2) :

. $(4.5, 0)$ A . B(4, 2) .

$$d_{AB} = \sqrt{(4.5 - 4)^2 + (0 - 2)^2} = \sqrt{4.25} \approx 2.062$$

. $\sqrt{4.25} \approx 2.062$, B(4, 2) , AB :

$$, (AB)^2 = 4^2 - 8 \cdot 4 + 20.25 = 4.25 \quad x = 4 \quad :$$

$$. \sqrt{4.25} \approx 2.062$$

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