

. " - x .

()	(")	()	
$200x$	200	x	
$160 \cdot 1.3x = 208x$	160	$(\frac{100+30}{100}) \cdot x = 1.3x$	- 30%
$30 \cdot 1.1x = 33x$	30	$(\frac{100+10}{100}) \cdot x = 1.1x$	- 10%
$10x$	$200 - 160 - 30 = 10$	x	-

. 1,004

$$. 208x + 33x + 10x = 1004 \quad :$$

$$208x + 33x + 10x = 1004$$

$$251x = 1004 \quad / : 251$$

$$x = \frac{1004}{251}$$

$$\boxed{x = 4}$$

. $x = 4$:

$$. 200 \cdot 4 = 800 \quad .$$

. 1,004

$$. 1004 - 800 = 204$$

. 204

:

. B - A

$$y = -\frac{4}{3}x + 8$$

. B(0,8) : $y = -\frac{4}{3} \cdot 0 + 8 = 8 : x = 0$ (1)

: y = 0

$$0 = -\frac{4}{3}x + 8$$

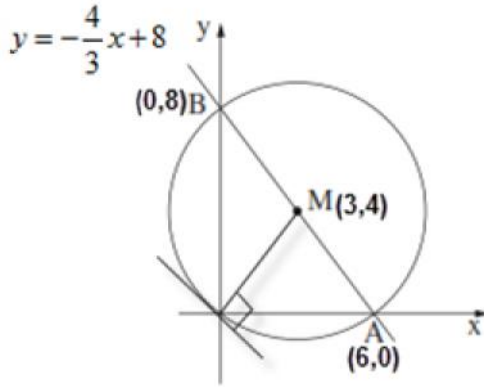
$$\frac{4}{3}x = 8 \quad / : \left(\frac{4}{3}\right)$$

$$x = 6$$

. A(6,0) :

. B(0,8) , A(6,0) :

(2)



$$\left. \begin{aligned} x &= \frac{6+0}{2} = \frac{6}{2} = 3 \\ y &= \frac{0+8}{2} = \frac{8}{2} = 4 \end{aligned} \right\} M(3,4)$$

. $R = \sqrt{(3-0)^2 + (4-8)^2} = 5 : MA$,

. $(x-3)^2 + (y-4)^2 = 25$:

$x = 0, y = 0$.

$(0-3)^2 + (0-4)^2 = 25$

$25 = 25$

. $-\frac{3}{4}$ ()

, $m = \frac{4-0}{3-0} = \frac{4}{3}$

. (0,0)

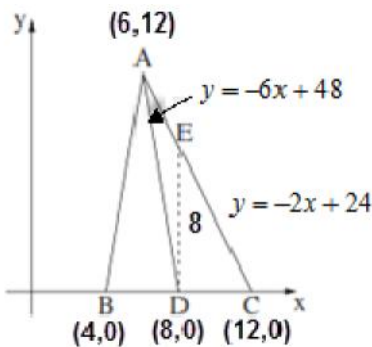
, $-\frac{3}{4}$,

$y - 0 = -\frac{3}{4}(x - 0)$

$y = -\frac{3}{4}x$

. $y = -\frac{3}{4}x$,

"



.0 y - ,D - D .
 $y = -6x + 48$ $y = 0$

$$0 = -6x + 48$$

$$6x = 48$$

$$x = 8 \rightarrow \boxed{D(8,0)}$$

.BC D(6,0)
 $8 = \frac{4 + x_C}{2} \quad / \cdot 2$
 $16 = 4 + x_C$
 $x_C = 12$

.C(12,0) , D(8,0) :

.12 A y - .
 $y = -6x + 48$ $y = 12$ **(1)**

$$12 = -6x + 48$$

$$6x = 36$$

$$x = 6 \rightarrow A(6,12)$$

. $x_A = 6$:

. AC **(2)**

$$m_{AC} = \frac{12 - 0}{6 - 12} = \frac{12}{-6} = -2$$

. C(12,0) , $m_{AC} = -2$: , AC

$$y - 0 = -2(x - 12)$$

$$\boxed{y = -2x + 24}$$

. $y = -2x + 24$:

. $x_E = x_D = 8$, x - DE **(3)**

$$y = -2x + 24$$

$$x = 8$$

$$y = -2 \cdot 8 + 24$$

$$y_E = 8$$

$$DE = 8 - 0 = 8$$

.8 DE :

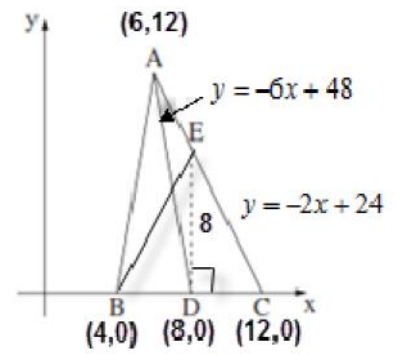
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.BEC .

$$BC = 12 - 4 = 8$$

$$S_{\triangle BEC} = \frac{BC \cdot DE}{2} = \frac{8 \cdot 8}{2} = 32$$

. " 32 BEC :



$$f(x) = \frac{x}{2} - \frac{8}{x}$$

$$x = 0, x \neq 0$$

$$x \neq 0$$

$$y = 0 \quad x =$$

$$0 = \frac{x}{2} - \frac{8}{x} \quad / \cdot 2x$$

$$0 = x^2 - 16$$

$$16 = x^2$$

$$x = \pm 4 \rightarrow (4, 0), (-4, 0)$$

$$(4, 0), (-4, 0):$$

$$f'(x) = \frac{1}{2} + \frac{8}{x^2}$$

$$\frac{1}{2} + \frac{8}{x^2} = 0 \quad / \cdot 2x^2$$

$$x^2 + 16 = 0$$

$$x^2 = -16$$

$$x = 2, A$$

$$f(2) = \frac{2}{2} - \frac{8}{2} = -3 \rightarrow (2, -3):$$

$$f'(2) = \frac{1}{2} + \frac{8}{2^2} = 2.5:$$

$$y - (-3) = 2.5(x - 2)$$

$$y + 3 = 2.5x - 5$$

$$y = 2.5x - 8$$

$$y = 2.5x - 8$$

• II

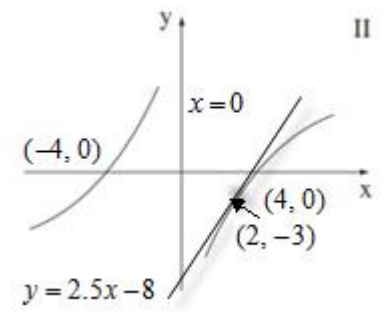
• $x < 0$, $x > 0$:

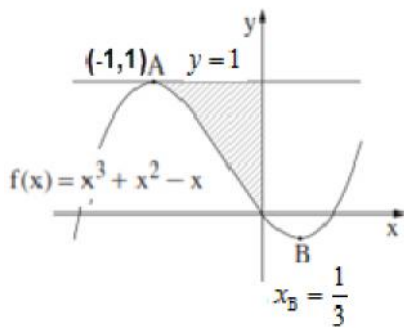
• $x = 0$, $x \neq 0$,

• $(4, 0)$, $(-4, 0)$, $x -$

• $(2, -3)$

• II :





$$.B - A \quad f(x) = x^3 + x^2 - x$$

$$. f'(x) = 0$$

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

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

$$x_{1,2} = \frac{-2 \pm \sqrt{2^2 - 4 \cdot 3 \cdot (-1)}}{2 \cdot 3}$$

$$x_{1,2} = \frac{-2 \pm 4}{6}$$

$$x_1 = \frac{-2+4}{6} = \frac{2}{6} = \frac{1}{3} \rightarrow \boxed{x_B = \frac{1}{3}}$$

$$x_2 = \frac{-2-4}{6} = \frac{-6}{6} = -1 \rightarrow \boxed{x_A = -1}$$

$$. x_B = \frac{1}{3}, x_A = -1 :$$

$$. A \quad y - \quad (1) .$$

$$y_A = (-1)^3 + (-1)^2 - (-1) = 1$$

$$. y_A = 1 :$$

$$. y = 1 ,$$

$$. y = 1 \quad :$$

$$S = \int_{-1}^0 (1 - (x^3 + x^2 - x)) dx$$

$$S = \int_{-1}^0 (1 - x^3 - x^2 + x) dx$$

$$S = \left[x - \frac{x^4}{4} - \frac{x^3}{3} + \frac{x^2}{2} \right]_{-1}^0$$

$$S = \left(0 - \frac{0^4}{4} - \frac{0^3}{3} + \frac{0^2}{2} \right) - \left(-1 - \frac{(-1)^4}{4} - \frac{(-1)^3}{3} + \frac{(-1)^2}{2} \right)$$

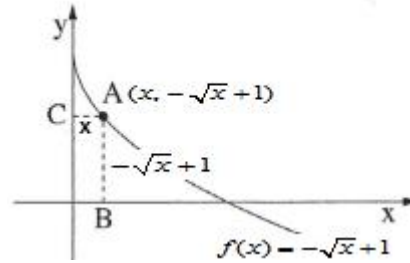
$$S = 0 - \left(-\frac{5}{12} \right)$$

$$\boxed{S = \frac{5}{12}}$$

$$. " \quad \frac{5}{12} \quad :$$

"

$\cdot A(x, -\sqrt{x}+1) \quad f(x) = -\sqrt{x}+1 \quad A \quad \cdot$
 $\cdot -\sqrt{x}+1-0 = -\sqrt{x}+1 \quad y - \quad AB$
 $\cdot x-0 = x \quad x - \quad AC$



$\cdot x + (-\sqrt{x}+1) = x - \sqrt{x} + 1 : \quad AB + AC$

$\cdot x - \sqrt{x} + 1 \quad AB + AC \quad :$

$\cdot AB + AC$ **נ'ניחוס סכום האורכים**

$P(x) = x - \sqrt{x} + 1$

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

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

$\frac{1}{2\sqrt{x}} = 1 \quad ()^2$

$\frac{1}{4x} = 1 \quad / \cdot 4x$

$1 = 4x \quad / : 4$

$x = 0.25$

:

$P'(0.2) = 1 - \frac{1}{2\sqrt{0.2}} = -0.12 < 0, \quad P'(0.3) = 1 - \frac{1}{2\sqrt{0.3}} = 0.09 > 0$

0	0.2	0.25	0.3	x
	-	0	+	$P'(x)$
	↘	Min	↗	

$\cdot \quad AB + AC \quad x_A = 0.25 \quad :$

"