

50% , $(x-5)$, 5 - x .

()	()	()	
3600	$\frac{3600}{x}$	x	
-	-	5	
$\frac{5400(x-5)}{x}$	$(\frac{100+50}{100}) \cdot \frac{3600}{x} = 1.5 \cdot \frac{3600}{x} = \frac{5400}{x}$	$x-5$	50%

1200
 $.3600+1200 = 4800 - 1200$, 3600

$$\frac{5400(x-5)}{x} = 4800 :$$

$$5400(x-5) = 4800x$$

$$5400x - 27000 = 4800x$$

$$600x = 27000 \quad / : 600$$

$$\boxed{x = 45}$$

. 45 :

. A(0,10) y - 2 , I. $y = 2x + 10$:

. C(0,-10) y - 2 , II. $y = 2x - 10$

. , $y = 2x - 10$ A

. $y = -\frac{1}{2}x + 10$, $m_{AB} \cdot 2 = -1 \rightarrow m_{AB} = -\frac{1}{2}$

. $y = -\frac{1}{2}x + 10$ II. $y = 2x - 10$

$$2x - 10 = -\frac{1}{2}x + 10$$

$$2.5x = 20 \quad / : 2.5$$

$$x = 8$$

$$y = 2 \cdot 8 - 10 = 6 \quad \boxed{B(8,6)}$$

B(8,6) :

I. $y = 2x + 10$

$$0 = 2x + 10$$

$$-2x = 10$$

$$x = -5 \rightarrow M(-5,0)$$

$\Delta AMC - \Delta ABC$

, ABCM

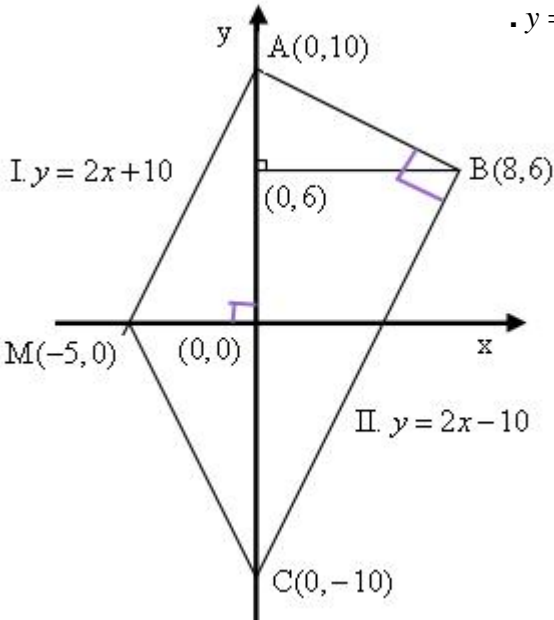
. $AC = y_A - y_C = 10 - (-10) = 20$

$S_{\Delta ABC} = \frac{20 \cdot 8}{2} = 80$, $x_B - 0 = 8$ $\Delta ABC -$

. $S_{\Delta AMC} = \frac{20 \cdot 5}{2} = 50$, $0 - x_M = 0 - (-5) = 5$ $\Delta AMC -$

$$80 + 50 = 130$$

.130 ABCM :



(5 M(4, 3)) $(x-4)^2 + (y-3)^2 = 25$

, $x=0$, $y=0$, A

. $y=0$, $x=8$, B

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

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

$(x-4)(x-4)+9=25$

$16+(y-3)(y-3)=25$

$x^2 - 4x - 4x + 16 + 9 = 25$

$16 + y^2 - 3y - 3y + 9 = 25$

$x^2 - 8x = 0$

$y^2 - 6y = 0$

$x(x-8)=0 \rightarrow O(0, 0), B(8, 0)$

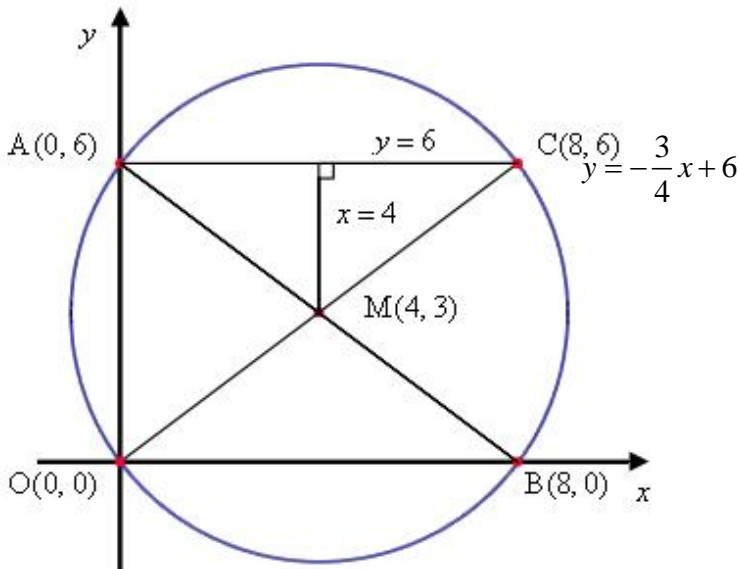
$y(y-6)=0 \rightarrow O(0, 0), A(0, 6)$

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

, AB

. $y-6 = -\frac{3}{4}(x-0) \rightarrow \boxed{y = -\frac{3}{4}x + 6}$: $m_{AB} = \frac{6-0}{0-8} = -\frac{3}{4}$

. $y = -\frac{3}{4}x + 6$ AB :



M(4, 3)

, $3 = -\frac{3}{4} \cdot 4 + 6 \rightarrow 3 = 3$

M

M(4, 3) , OC .

$$\left. \begin{aligned} 4 &= \frac{0+x_C}{2} \\ 8 &= x_C \end{aligned} \right\} \boxed{C(8, 6)}$$

. C(8, 6) :

. MA - MC ,

ΔAMC -

. AC -

AC

, $y_C = y_A = 6$, $x =$

AC

. M(4, 3)

$x =$

, $x = 4$

$y =$

. $x = 4$:

$$f(x) = x^3 - 3x$$

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

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

$$3 = 3x^2 \quad /:3$$

$$1 = x^2$$

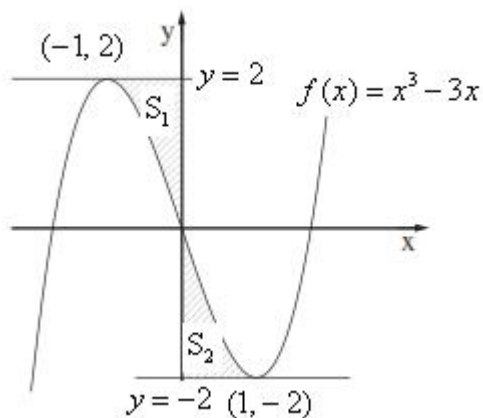
$$x_1 = 1 \rightarrow (1, -2) \leftarrow y = 1^3 - 3 \cdot 1 = -2$$

$$x_2 = -1 \rightarrow (-1, 2) \leftarrow y = (-1)^3 - 3 \cdot (-1) = 2$$

((-1, 2) , (1, -2) :

$$y = -2 - y = 2$$

$$2 - (x^3 - 3x) = 2 - x^3 + 3x \quad - S_1$$



$$S_1 = \int_{-1}^0 (2 - x^3 + 3x) dx$$

$$S_1 = \left[2x - \frac{x^4}{4} + \frac{3x^2}{2} \right]_{-1}^0$$

$$S_1 = \left(2 \cdot 0 - \frac{0^4}{4} + \frac{3 \cdot 0^2}{2} \right) - \left(2 \cdot (-1) - \frac{(-1)^4}{4} + \frac{3 \cdot (-1)^2}{2} \right)$$

$$S_1 = 0 - (-0.75)$$

$$S_1 = 0.75$$

$$x^3 - 3x - (-2) = x^3 - 3x + 2 \quad - S_2$$

$$S_2 = \int_0^1 (x^3 - 3x + 2) dx$$

$$S_2 = \left[\frac{x^4}{4} - \frac{3x^2}{2} + 2x \right]_0^1$$

$$S_2 = \left(\frac{1^4}{4} - \frac{3 \cdot 1^2}{2} + 2 \cdot 1 \right) - \left(\frac{0^4}{4} - \frac{3 \cdot 0^2}{2} + 2 \cdot 0 \right)$$

$$S_2 = 0.75 - 0$$

$$S_2 = 0.75$$

$$0.75 + 0.75 = 1.5 :$$

$$" \quad 1.5 \quad :$$

"

$$f(x) = 2 \cdot x + \frac{1}{2} \cdot \frac{1}{x}$$

$$f'(x) = 2 + \frac{1}{2} \cdot \left(-\frac{1}{x^2}\right)$$

$$0 = 2 + \frac{1}{2} \cdot \left(-\frac{1}{x^2}\right) \rightarrow 0 = 2 - \frac{1}{2x^2} \quad / \cdot x^2$$

$$0 = 4x^2 - 1 \rightarrow 1 = 4x^2 \rightarrow 0.25 = x^2$$

$$x_1 = 0.5 \rightarrow (0.5, 2) \leftarrow y = 2 \cdot 0.5 + \frac{1}{2} \cdot \frac{1}{0.5} = 2$$

$$x_1 = -0.5 \rightarrow (-0.5, -2) \leftarrow y = 2 \cdot (-0.5) + \frac{1}{2} \cdot \frac{1}{-0.5} = -2$$

$$(-0.5, -2), \quad (0.5, 2) \quad :$$

$$x = -1$$

$$x = 0.5$$

$$(0.5, 2)$$

$$x = 0.5$$

$$y = 2$$

$$(-1, -2.5) \leftarrow y = 2 \cdot (-1) + \frac{1}{2} \cdot \frac{1}{-1} = -2.5 \quad (-1, -2.5) \quad x = -1$$

$$m = f'(-1) = 2 + \frac{1}{2} \cdot \left(-\frac{1}{(-1)^2}\right) = 1.5$$

$$: (-1, -2.5)$$

$$y - (-2.5) = 1.5(x - (-1))$$

$$y + 2.5 = 1.5x + 1.5$$

$$y = 1.5x - 1$$

:

$$\begin{cases} y = 2 \\ y = 1.5x - 1 \end{cases}$$

$$1.5x - 1 = 2$$

$$1.5x = 3$$

$$x = 2 \rightarrow (2, 2)$$

$$(2, 2) :$$

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$$y = \frac{4}{x^2}, \quad x^2 \cdot y = 4 \quad x, y > 0$$

$$S = x + \frac{4}{x^2}$$

מינימום הסכום $x + y$,

$$S = x + \frac{4}{x} \cdot \frac{1}{x} :$$

נגזרת של מכפלה, כפי שרואה בנוסחאון.

$$[f(x) \cdot g(x)] = f'(x) \cdot g(x) + f(x) \cdot g'(x)$$

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

$$S' = 1 - \frac{4}{x^3} - \frac{4}{x^3}$$

$$S' = \frac{x^3 - 4 - 4}{x^3}$$

$$S' = \frac{x^3 - 8}{x^3}$$

$$x^3 - 8 = 0$$

$$x^3 = 8$$

$$x = 2$$

$$\left. \begin{array}{l} S'(1) = \frac{1^3 - 8}{1^3} < 0 \\ S'(3) = \frac{3^3 - 8}{3^3} > 0 \end{array} \right\} \text{Min}$$

$$y = \frac{4}{2^2} = 1, \quad ,$$

$$x = 2 -$$

$$. \quad x + y \quad , x = 2, y = 1 :$$