

1.5x ,

() x -

, 382.5

$$.4x + 3 \cdot 1.5x = 382.5 :$$

$$4x + 4.5x = 382.5$$

$$8.5x = 382.5 \quad / : 8.5$$

$$\boxed{x = 45}$$

$$1.5x = 1.5 \cdot 45 = 67.5 :$$

. 67.5 , 45 :

, 40% - '

$$\cdot \frac{100-40}{100} \cdot 67.5 = 0.6 \cdot 67.5 = 40.5$$

, _____ , 20%

$$\cdot \frac{100-20}{100} \cdot 40.5 = 0.8 \cdot 40.5 = 32.4 , ,$$

. 32.4 , , :

.' , 67.5 ,

, 60% - '

$$\cdot \frac{100-60}{100} \cdot 67.5 = 0.4 \cdot 67.5 = 27$$

, 20% ,

20%

$$m_{DM} = \frac{1-5}{0-2} = \frac{-4}{-2} = 2 : DM$$

$$m_{AC} \cdot m_{DM} = -1 \rightarrow m_{AC} \cdot 2 = -1 \rightarrow m_{AC} = -\frac{1}{2} : AC$$

$$M(2, 5), m_{AC} = -\frac{1}{2} : AC$$

$$y - 5 = -\frac{1}{2}(x - 2)$$

$$y - 5 = -\frac{1}{2}x + 1$$

$$y = -\frac{1}{2}x + 6$$

$$y = -\frac{1}{2}x + 6 \quad AC$$

$$m = m_{DM} = 2, \quad (1)$$

$$E(7, 5), m = 2 :$$

$$y - 5 = 2(x - 7)$$

$$y - 5 = 2x - 14$$

$$y = 2x - 9$$

$$y = 2x - 9$$

$$C \quad (2)$$

$$\begin{cases} y = 2x - 9 \\ y = -\frac{1}{2}x + 6 \end{cases}$$

$$2x - 9 = -\frac{1}{2}x + 6$$

$$2\frac{1}{2} = 15$$

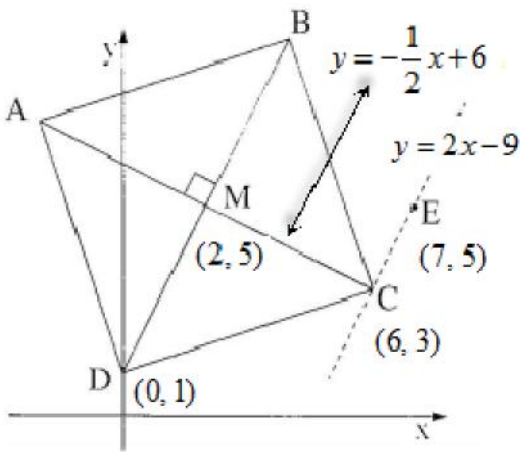
$$x = 6 \rightarrow y = 2 \cdot 6 - 9 = 3 \rightarrow C(6, 3)$$

$$C(6, 3) :$$

$$d_{DC} = \sqrt{(0-6)^2 + (1-3)^2} = \sqrt{40} :$$

$$4\sqrt{40} = 25.298 \quad ABCD :$$

"



.10 $O(0,0)$, $x^2 + y^2 = 100$.

.A, B $y = 0$

. $x = \pm 10$, $x^2 + 0^2 = 100$

.B(-10, 0) , A(10, 0) :

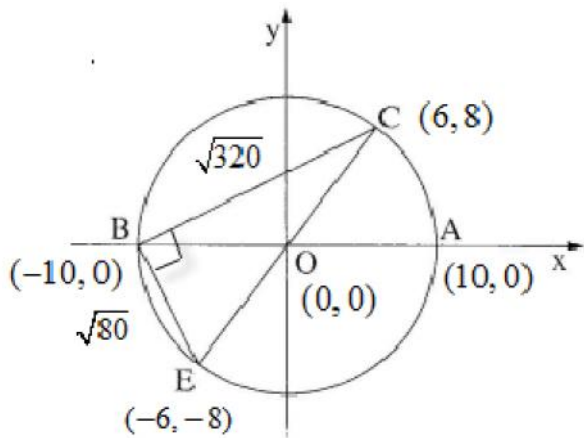
.C $y =$ $x = 6$.

. $y^2 = 64 \rightarrow y = \pm 8$, $6^2 + y^2 = 100$

. $y_C = 8$

C

. $y_C = 8$:



CE .

.CE $O(0,0)$, **(1)**

$$\left. \begin{aligned} 0 &= \frac{6+x_E}{2} \rightarrow 0 = 6+x_E \rightarrow -6 = x_E \\ 0 &= \frac{8+y_E}{2} \rightarrow 0 = 8+y_E \rightarrow -8 = y_E \end{aligned} \right\} \boxed{E(-6, -8)}$$

.E(-6, -8) :

. $m_{BE} = \frac{0 - (-8)}{-10 - (-6)} = \frac{8}{-4} = -2$ BE **(2)**

. $m_{BC} = \frac{0 - 8}{-10 - 6} = \frac{-8}{-16} = \frac{1}{2}$ BC

.() BC \perp BE ,

, $m_{BE} \cdot m_{BC} = -2 \cdot \frac{1}{2} = -1$

. BC \perp BE - :

. ΔCBE **(3)**

$d_{BE} = \sqrt{(-10 - (-6))^2 + (0 - (-8))^2} = \sqrt{80}$

$d_{BC} = \sqrt{(-10 - 6)^2 + (0 - 8)^2} = \sqrt{320}$

$S_{\Delta CBE} = \frac{BE \cdot BC}{2} = \frac{\sqrt{80} \cdot \sqrt{320}}{2} = \frac{160}{2} = 80$

. " 80 ΔCBE :

"

$$f(x) = x^3 - 6x^2 + 9x$$

, B - A

$$f'(x) = 3x^2 - 12x + 9$$

$$3x^2 - 12x + 9 = 0$$

$$x_{1,2} = \frac{-(-12) \pm \sqrt{(-12)^2 - 4 \cdot 3 \cdot 9}}{2 \cdot 3}$$

$$x_{1,2} = \frac{12 \pm 6}{6}$$

$$x_1 = \frac{12+6}{6} = \frac{18}{6} = 3 \rightarrow y = 3^3 - 6 \cdot 3^2 + 9 \cdot 3 = 0 \rightarrow \boxed{B(3, 0)}$$

$$x_2 = \frac{12-6}{6} = \frac{6}{6} = 1 \rightarrow y = 1^3 - 6 \cdot 1^2 + 9 \cdot 1 = 4 \rightarrow \boxed{A(1, 4)}$$

, B(3, 0), A(1, 4) :

$$y = 4x \quad (0, 0)$$

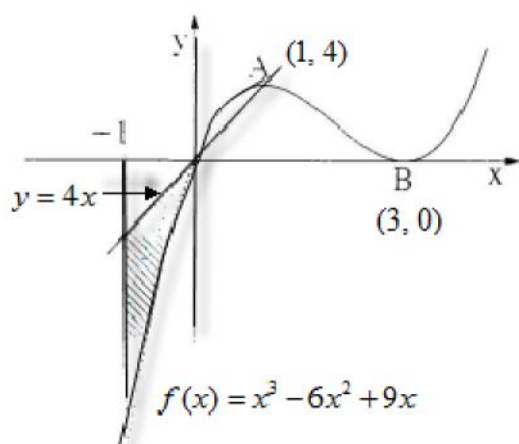
$$A(1, 4) - \quad (1)$$

$$y = 4x \quad A(1, 4), \quad y = 4 \cdot 1 = 4 \quad x = 1 \quad : A(1, 4)$$

$$y = 4x \quad (0, 0), \quad y = 4 \cdot 0 = 0 \quad x = 0 \quad : (0, 0)$$

$$y = 4x \quad :$$

(2)



$$4x - (x^3 - 6x^2 + 9x) = 4x - x^3 + 6x^2 - 9x = -x^3 + 6x^2 - 5x$$

$$S = \int_{-1}^0 (-x^3 + 6x^2 - 5x) dx$$

$$S = \left[-\frac{x^4}{4} + \frac{6 \cdot x^3}{3} - \frac{5 \cdot x^2}{2} \right]_{-1}^0$$

$$S = \left(-\frac{0^4}{4} + \frac{6 \cdot 0^3}{3} - \frac{5 \cdot 0^2}{2} \right) - \left(-\frac{(-1)^4}{4} + \frac{6 \cdot (-1)^3}{3} - \frac{5 \cdot (-1)^2}{2} \right)$$

$$S = 0 - (-4.75)$$

$$\boxed{S = 4.75}$$

" 4.75 :

"

$x > 0$, $f(x) = 2x + \frac{8}{x}$

$x = 1$, A (1) (1)

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

$$f'(1) = 2 - \frac{8}{1^2} = -6$$

-6 :

A (2) (2)

$$y_A = 2 \cdot 1 + \frac{8}{1} = 10$$

$$A(1, 10), m = -6$$

$$y - 10 = -6(x - 1)$$

$$y - 10 = -6x + 6$$

$$\boxed{y = -6x + 16}$$

$y = -6x + 16$:

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

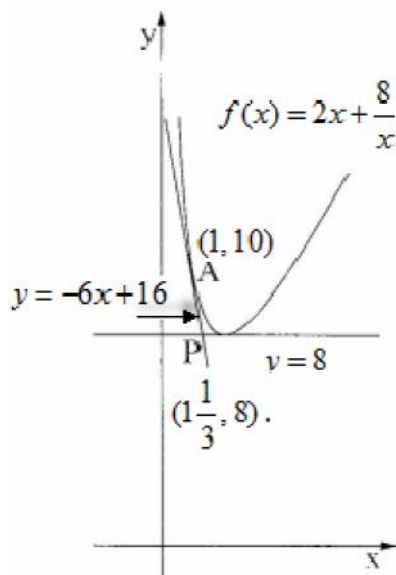
$$0 = 2 - \frac{8}{x^2} \rightarrow 0 = 2x^2 - 8$$

$$8 = 2x^2 \quad / : 2$$

$$x^2 = 4 \rightarrow x = 2 \leftarrow x > 0$$

$$y = 2 \cdot 2 + \frac{8}{2} \rightarrow y = 8 \rightarrow \boxed{(2, 8)}$$

$(2, 8)$:



$$. y = 8 ,$$

(1) .

$$. y = 8 :$$

.P

(2)

$$\begin{cases} y = -6x + 16 \\ y = 8 \end{cases}$$

$$8 = -6x + 16$$

$$6x = 8$$

$$x = 1\frac{1}{3} \rightarrow \boxed{P(1\frac{1}{3}, 8)}$$

$$. P(1\frac{1}{3}, 8):$$

. AB

pin'jin

. $AB = y_A - y_B$ - $x_A = x_B$: , y - AB -

. $A(x, -x+2)$ $y = -x+2$, A

. $B(x, -0.5x^2+1)$ $f(x) = -0.5x^2+1$, B

$AB = y_A - y_B = -x+2 - (-0.5x^2+1)$

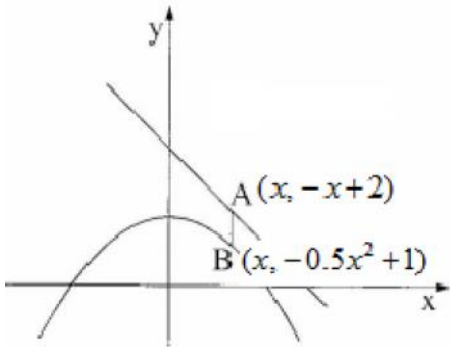
$AB = -x+2+0.5x^2-1$

$AB = 0.5x^2 - x + 1$

$(AB)' = x - 1$

$0 = x - 1$

$x = 1$



:

$(AB)'(0) = 0 - 1 < 0$, $(AB)'(2) = 2 - 1 > 0$

0	1	2	x
-	0	+	(AB)'
↘	Min	↗	

.1 x - :

. $AB(1) = 0.5 \cdot 1^2 - 1 + 1 = 0.5$ AB

. 0.5 AB :