

.() $m_{BC} = -1$, BC $(m=1)y = x-1$.

. B(2,3) , $m_{BC} = -1$: , BC

$$y-3 = -1(x-2)$$

$$y-3 = -x+2$$

$$\boxed{y = -x+5}$$

. $y = -x+5$ BC :

E (1) .

$$\begin{cases} y = x-1 \\ y = -x+5 \end{cases}$$

$$x-1 = -x+5$$

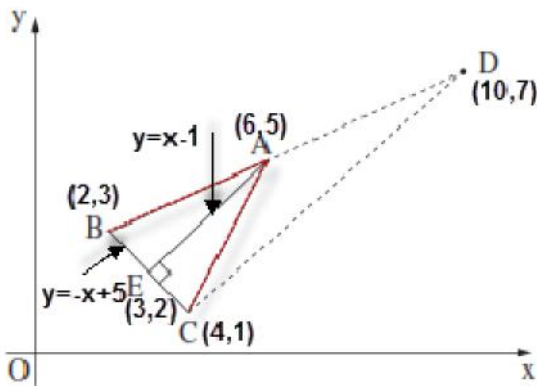
$$2x = 6 \quad /:2$$

$$x = 3 \rightarrow y = 3-1 = 2 \rightarrow \boxed{E(3,2)}$$

$$x = 3 \rightarrow y = 3-1 = 2 \rightarrow \boxed{E(3,2)}$$

.E(3,2) :

.BC E , ABC BC AE (2)



$$2 = \frac{3+y_C}{2} \quad / \cdot 2 \quad 3 = \frac{2+x_C}{2} \quad / \cdot 2$$

$$4 = 3 + x_C$$

$$y_C = 1$$

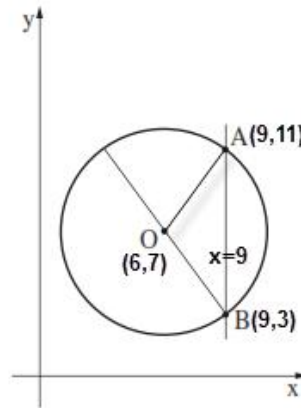
.C(4,1) :

.BC - DC (1) .

$$m_{DC} = \frac{7-1}{10-4} = \frac{6}{6} = 1$$

$$m_{DC} \cdot m_{BC} = 1 \cdot (-1) = -1$$

. :



(1)

$$AO = R = \sqrt{(9-6)^2 + (11-7)^2} = \sqrt{25}$$

$$\boxed{R=5}$$

.5 :

$$\cdot (x-6)^2 + (y-7)^2 = 25 \quad :$$

(2)

.B , $x=9$.

$$x=9$$

$$(9-6)^2 + (y-7)^2 = 25$$

$$9 + (y-7)(y-7) = 25$$

$$9 + y^2 - 7y - 7y + 49 = 25$$

$$y^2 - 14y + 33 = 0$$

$$y_{1,2} = \frac{-(-14) \pm \sqrt{(-14)^2 - 4 \cdot 1 \cdot 33}}{2 \cdot 1}$$

$$y_{1,2} = \frac{14 \pm \sqrt{64}}{2} = \frac{14 \pm 8}{2}$$

$$y_1 = \frac{14+8}{2} = \frac{22}{2} = 11 = y_A$$

$$y_2 = \frac{14-8}{2} = \frac{6}{2} = 3 = y_B \rightarrow \boxed{B(9,3)}$$

. B(9,3) :

$$m_{BO} = \frac{7-3}{6-9} = \frac{4}{-3} = -1\frac{1}{3}$$

$$\cdot O(6,7) , m_{BO} = -1\frac{1}{3}$$

$$y-7 = -1\frac{1}{3}(x-6)$$

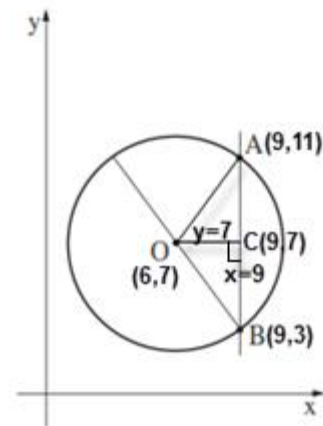
$$y-7 = -1\frac{1}{3}x + 8$$

$$\boxed{y = -1\frac{1}{3}x + 15}$$

$$\cdot y = -1\frac{1}{3}x + 15 \quad :$$

$\cdot x =$ $\quad \quad \quad$ AB $\quad \quad \quad \cdot AOB$
 $\cdot C(9,7)$ $\quad \quad \quad$ AB $\quad \quad \quad$ $, y =$ $\quad \quad \quad$ $x = 9$
 $\quad \quad \quad$ $, y = 7$
 $d_{AB} = y_A - y_B = 11 - 3 = 8$
 $d_{OC} = x_C - x_O = 9 - 6 = 3$
 $S_{\Delta AOB} = \frac{AB \cdot OC}{2} = \frac{8 \cdot 3}{2} = 12$

$\cdot "$ 12 $\quad \quad \quad$ AOB $\quad \quad \quad$ $:$



$$f(x) = 2\sqrt{x} + 3$$

$$x \geq 0$$

$$x \geq 0$$

$$x = 0$$

$$f(0) = 2\sqrt{0} + 3 = 3 \rightarrow (0, 3)$$

$$(0, 3)$$

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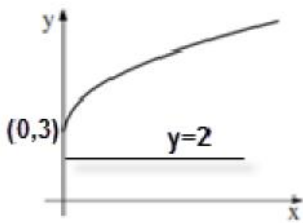
(0, 3)

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

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

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

$$1 = 0$$



$$x = 1$$

$$f(1) = 2\sqrt{1} + 3 = 5 \rightarrow (1, 5)$$

$$m = f'(1) = \frac{1}{\sqrt{1}} = 1$$

$$y - 5 = 1(x - 1)$$

$$y - 5 = x - 1$$

$$y = x + 4$$

$$y = x + 4$$

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(0, 3)

$$x > 0$$

$$x = 1$$

$$x = 1$$

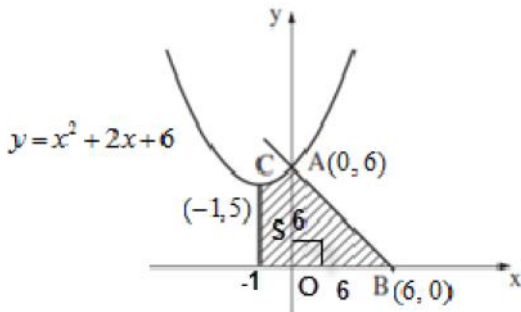
$$x > 0$$

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$$y = 2$$

$$y = 2$$

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.A $y = x^2 + 2x + 6$
 $x = 0$ $y =$

$f(0) = 0^2 + 2 \cdot 0 + 6 \rightarrow A(0, 6)$

.A(0, 6) :

. -1 $A(0, 6)$

. $A(0, 6)$, $m_{AB} = -1$ (1)

$y - 6 = -1(x - 0)$

$y - 6 = -x$

$y = -x + 6$

. $y = -x + 6$:

. $y = 0$ $x =$ (2)

$0 = -x + 6$

$x = 6 \rightarrow B(6, 0)$

.B(6, 0) :

.C ,

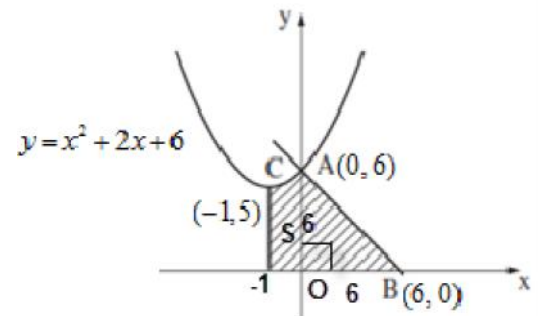
$f'(x) = 2x + 2$

$0 = 2x + 2$

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

$x = -1 \rightarrow f(-1) = (-1)^2 + 2 \cdot (-1) + 6 = 5 \rightarrow C(-1, 5)$

. C(-1, 5) :



• ΔAOB

$$d_{AO} = y_A - y_O = 6 - 0 = 6$$

$$d_{OB} = x_B - x_O = 6 - 0 = 6$$

$$S_{\Delta AOB} = \frac{BO \cdot AO}{2} = \frac{6 \cdot 6}{2} = 18$$

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

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

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

$$S = 0 - \left(-5 \frac{1}{3} \right)$$

$$\boxed{S = 5 \frac{1}{3}}$$

$$.18 + 5 \frac{1}{3} = " \quad 23 \frac{1}{3}$$

$$. " \quad 23 \frac{1}{3} \quad :$$

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

پلن'ج'ن

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

$$y' = 2x - 2(5-x) = 2x - 10 + 2x = 4x - 10$$

$$4x - 10 = 0$$

$$4x = 10$$

$$x = 2.5$$

$$y = 2x^2 - 10x + 25$$

$$y' = 4x - 10$$

$$0 = 4x - 10$$

$$-4x = -10 \quad /: (-4)$$

$$x = 2.5$$

$$y'(2) = 4 \cdot 2 - 10 < 0, \quad y'(3) = 4 \cdot 3 - 10 > 0$$

0	2	2.5	3	5	x
	-	0	+		y'
	↘	Min	↗		

$$, x = 2.5 :$$

$$x = 2.5$$

$$y = 2 \cdot 2.5^2 - 10 \cdot 2.5 + 25 = 12.5$$

$$" 12.5 :$$

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