

$$m_{AO} = \frac{y_A - y_O}{x_A - x_O} = \frac{4 - 0}{2 - 0} = \frac{4}{2} = 2$$

$$y - y_1 = m(x - x_1) :$$

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

$$\boxed{y = 2x}$$

$$. y = 2x \quad OA \quad :$$

: ,OA AC .

$$m_{OA} = 2 \rightarrow m_{AC} = -\frac{1}{2}$$

$$y - 4 = -\frac{1}{2}(x - 2) \rightarrow y - 4 = -\frac{1}{2}x + 1$$

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

$$. y = -\frac{1}{2}x + 5 \quad AC \quad :$$

$$: x - ,C \quad (1) .$$

$$0 = -\frac{1}{2}x + 5 \quad / \cdot 2$$

$$0 = -x + 10$$

$$x = 10$$

$$\boxed{C(10, 0)}$$

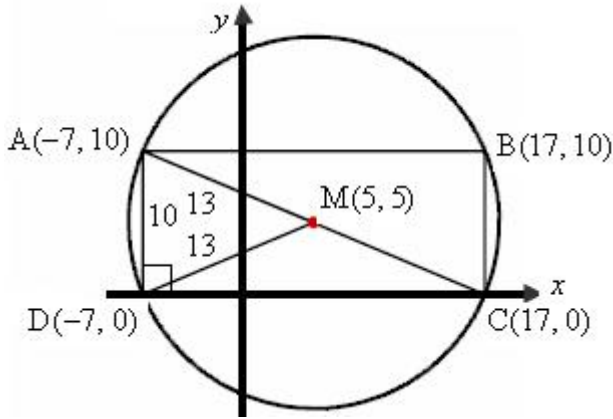
$$C(10, 0) :$$

: , , (2)

$$\left. \begin{aligned} x_M &= \frac{x_A + x_C}{2} = \frac{2 + 10}{2} = \frac{12}{2} = 6 \\ y_M &= \frac{y_A + y_C}{2} = \frac{4 + 0}{2} = \frac{4}{2} = 2 \end{aligned} \right\} M(6, 2)$$

$$\left. \begin{aligned} x_M &= \frac{x_O + x_B}{2} \rightarrow 6 = \frac{0 + x_B}{2} \rightarrow x_B = 12 \\ y_M &= \frac{y_O + y_B}{2} \rightarrow 2 = \frac{0 + y_B}{2} \rightarrow y_B = 4 \end{aligned} \right\} B(12, 4)$$

$$B(12, 4) \quad :$$



$$(x-5)^2 + (y-5)^2 = 169$$

.13

$$M(5, 5)$$

$$y = 0 \quad x =$$

$$: \quad y = 0$$

$$(x-5)^2 + (0-5)^2 = 169$$

$$(x-5)(x-5) + 25 = 169$$

$$x^2 - 5x - 5x + 25 + 25 - 169 = 0$$

$$x^2 - 10x - 119 = 0$$

$$x_{1,2} = \frac{10 \pm 24}{2}$$

$$x_1 = \frac{10+24}{2} = \frac{34}{2} = 17 \rightarrow C(17, 0)$$

$$x_2 = \frac{10-24}{2} = \frac{-14}{2} = -7 \rightarrow D(-7, 0)$$

D(-7, 0) , C(17, 0) :

.() AC () $\sphericalangle ADC = 90^\circ$
 .AC M(5, 5)

:

$$\left. \begin{aligned} x_M &= \frac{x_C + x_A}{2} \rightarrow 5 = \frac{17 + x_A}{2} \rightarrow 10 = 17 + x_A \rightarrow x_A = -7 \\ y_M &= \frac{y_C + y_A}{2} \rightarrow 5 = \frac{0 + y_A}{2} \rightarrow y_A = 10 \end{aligned} \right\} A(-7, 10)$$

, ABCD

$$\left. \begin{aligned} y_B &= y_A = 10 \\ x_B &= x_C = 17 \end{aligned} \right\} B(17, 10)$$

B(17, 10) , A(-7, 10) :

: AMD

$$MA = MD = 13$$

$$AD = y_A - y_D = 10 - 0 = 10 \quad : y -$$

$$13 + 13 + 10 = 36 :$$

. 36 AMD :

() $x -$.

$x - 2$

(t) (v) (s) - $s = vt$

s	v	t	
$10x$	10	x	
$12.5(x - 2)$	$1.25 \cdot 10 = 12.5$	$x - 2$	

" 98.75 ,

$10x + 12.5(x - 2) = 98.75$:

:

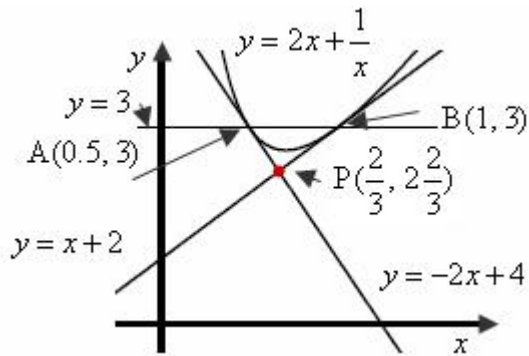
$$10x + 12.5(x - 2) = 98.75$$

$$10x + 12.5x - 25 = 98.75$$

$$22.5x = 123.75$$

$$\boxed{x = 5.5}$$

, 5.5 :



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

B - A

$$y = 3$$

:

$$2x + \frac{1}{x} = 3 \quad / \cdot x$$

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

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

$$x_{1,2} = \frac{3 \pm 1}{4}$$

$$x_1 = \frac{3+1}{4} = \frac{4}{4} = 1 \rightarrow B(1, 3)$$

$$x_2 = \frac{3-1}{4} = \frac{2}{4} = 0.5 \rightarrow A(0.5, 3)$$

B(1, 3) , A(0.5, 3) :

B(1, 3) , A(0.5, 3)

(1) .

$$y' = 2 - \frac{1}{x^2}$$

$$y - y_1 = m(x - x_1)$$

$$y'(0.5) = 2 - \frac{1}{0.5^2} = -2$$

$$m = -2, \quad (0.5, 3)$$

$$y - 3 = -2(x - 0.5)$$

$$y - 3 = -2x + 1$$

$$y = -2x + 4$$

$$y'(1) = 2 - \frac{1}{1^2} = 1$$

$$m = 1, \quad (1, 3)$$

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

$$y - 3 = x - 1$$

$$y = x + 2$$

. y = x + 2

B

y = -2x + 4

A

:

:

(2)

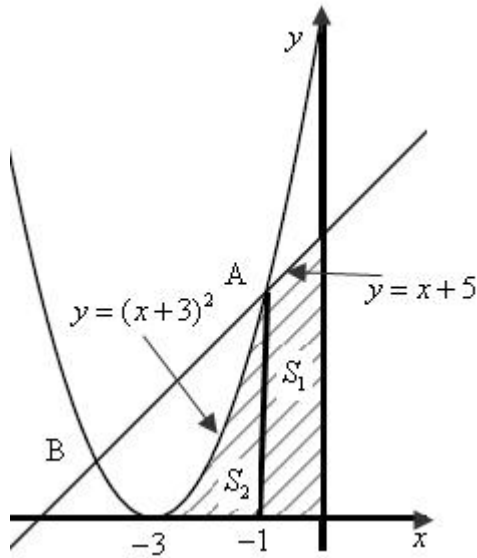
$$\begin{cases} y = -2x + 4 \\ y = x + 2 \end{cases}$$

$$-2x + 4 = x + 2$$

$$-3x = -2$$

$$x = \frac{2}{3} \rightarrow y = \frac{2}{3} + 2 \rightarrow y = 2\frac{2}{3} \rightarrow P\left(\frac{2}{3}, 2\frac{2}{3}\right)$$

. P(2/3, 2 2/3) :



$$(x+3)^2 = x+5$$

$$(x+3)(x+3) = x+5$$

$$x^2 + 3x + 3x + 9 - x - 5 = 0$$

$$x^2 + 5x + 4 = 0 \rightarrow x_{1,2} = \frac{-5 \pm 3}{2}$$

$$x_1 = \frac{-5+3}{2} = \frac{-2}{2} = -1 \rightarrow \boxed{x_A = -1}$$

$$x_2 = \frac{-5-3}{2} = \frac{-8}{2} = -4 \rightarrow x_B = -4$$

$$x_A = -1 :$$

$$y' = 0$$

$$\boxed{y = (x+3)^2}$$

$$\boxed{y' = 2(x+3)}$$

$$0 = 2(x+3)$$

$$x+3 = 0$$

$$\boxed{x_{\min} = -3}$$

$$(\quad) x_{\min} = -3 :$$

$$.S_2 - S_1 :$$

S_2	S_1	
$y = (x+3)^2$	$y = x+5$	
$y = 0$	$y = 0$	1
$x = -1$	$x = 0$	x
$x = -3$	$x = -1$	x

$$S_2 = \int_{-3}^{-1} (x+3)^2 dx$$

$$S_2 = \left. \frac{(x+3)^3}{3} \right|_{-3}^{-1}$$

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

$$\boxed{S_2 = 2\frac{2}{3}}$$

$$S_1 = \int_{-1}^0 (x+5) dx$$

$$S_1 = \left. \frac{x^2}{2} + 5x \right|_{-1}^0$$

$$S_1 = \left(\frac{0^2}{2} + 5 \cdot 0 \right) - \left(\frac{(-1)^2}{2} + 5 \cdot (-1) \right)$$

$$\boxed{S_1 = 4.5}$$

$$S_1 + S_2 = 4.5 + 2\frac{2}{3} = \boxed{7\frac{1}{6}} :$$

$$7\frac{1}{6}$$

$$f'(x) = 8(x-1)^3 \quad f(x)$$

$$f'(x) = 0$$

$$8(x-1)^3 = 0 \quad /:8$$

$$(x-1)^3 = 0 \quad / \sqrt[3]{}$$

$$x-1 = 0$$

$$\boxed{x=1}$$

$$f'(0) = 8 \cdot (0-1)^3 = -8 < 0$$

$$f'(2) = 8 \cdot (2-1)^3 = 8 > 0$$

0	1	2	x
-	0	+	y'
↘	Min	↗	

$$x = 1$$

$$, x = 1 :$$

$$: f(x) \quad , f'(x)$$

$$f(x) = \int f'(x) dx$$

$$f(x) = \int 8(x-1)^3 dx$$

$$f(x) = \frac{8(x-1)^4}{4} + c$$

$$f(x) = 2(x-1)^4 + c$$

$$: \quad (1, 3)$$

$$3 = 2 \cdot (1-1)^4 + c$$

$$3 = c$$

$$c = 3$$

$$\boxed{f(x) = 2(x-1)^4 + 3}$$

$$1 \quad f(x) = 2(x-1)^4 + 3 :$$