

( " ) x -

. x - 5 , " 5 - ,

$$\frac{100 + 60}{100} x = 1.6x : 60\% -$$

1.6x : , x - 5 :

1.2

$$x \cdot x = x^2$$

$$: , 1.6x(x-5)$$

$$1.6x(x-5) = 1.2x^2$$

$$1.6x^2 - 8x = 1.2x^2$$

$$0.4x^2 - 8x = 0$$

$$x(0.4x - 8) = 0$$

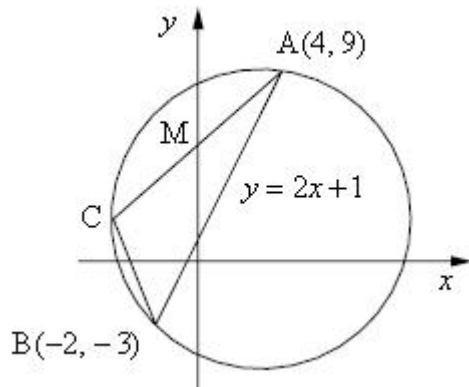
~~$$x_1 = 0$$~~

$$0.4x - 8 = 0$$

$$0.4x = 8$$

$$\boxed{x_2 = 20}$$

. " 20 :



$$, (x-3)^2 + (y-2)^2 = 50$$

$$\cdot \sqrt{50} \quad (3, 2)$$

B - A

$$y = 2x + 1$$

:

$$y = 2x + 1$$

$$(x-3)^2 + (2x+1-2)^2 = 50$$

$$(x-3)^2 + (2x-1)^2 = 50$$

$$(x-3)(x-3) + (2x-1)(2x-1) = 50$$

$$x^2 - 3x - 3x + 9 + 4x^2 - 2x - 2x + 1 - 50 = 0$$

$$5x^2 - 10x - 40 = 0$$

$$x_{1,2} = \frac{10 \pm 30}{10}$$

$$x_1 = \frac{10+30}{10} = \frac{40}{10} = 4 \quad \rightarrow y_1 = 2 \cdot 4 + 1 = 9 \quad \rightarrow A(4, 9)$$

$$x_2 = \frac{10-30}{10} = \frac{-20}{10} = -2 \quad \rightarrow y_2 = 2 \cdot (-2) + 1 = -3 \quad \rightarrow B(-2, -3)$$

B(-2, -3), A(4, 9) :

· AC

M(0, y)

(1) .

:

$$x_M = \frac{x_C + x_A}{2} \rightarrow 0 = \frac{x_C + 4}{2} \rightarrow 0 = x_C + 4 \rightarrow x_C = -4$$

$$x_C = -4 :$$

,

$$x_C = -4$$

(2)

$$(-4-3)^2 + (y-2)^2 = 50$$

$$49 + (y-2)(y-2) = 50$$

$$49 + y^2 - 2y - 2y - 50 = 0$$

$$y^2 - 4y + 3 = 0$$

$$y_{1,2} = \frac{4 \pm 2}{2}$$

$$y_1 = \frac{4+2}{2} = \frac{6}{2} = 3 \quad \rightarrow \boxed{y_C = 3}$$

$$y_2 = \frac{4-2}{2} = \frac{2}{2} = 1 \quad \leftarrow y_C > 2$$

·  $y_C = 3$  :

$$f(x) = x + \frac{a}{x} - 10$$

$$\boxed{x \neq 0} : 0 -$$

$$x \neq 0 :$$

$$, x = 4 \rightarrow f'(x) = 0 \quad , x = 4$$

$$f(x) = x + \frac{a}{x} - 10$$

$$f'(x) = 1 - \frac{a}{x^2}$$

$$0 = 1 - \frac{a}{4^2} \leftarrow f'(4) = 0$$

$$\frac{a}{16} = 1 \quad / \cdot 16$$

$$\boxed{a = 16}$$

$$a = 16 :$$

$$f(x) = x + \frac{16}{x} - 10 \quad a = 16$$

:

$$\boxed{f(x) = x + \frac{16}{x} - 10}$$

$$f'(x) = 1 - \frac{16}{x^2}$$

$$\boxed{f'(x) = \frac{x^2 - 16}{x^2}}$$

$$0 = \frac{x^2 - 16}{x^2}$$

$$0 = x^2 - 16 \rightarrow x^2 = 16$$

$$x_1 = -4 \rightarrow y_1 = -4 + \frac{16}{-4} - 10 = -18 \rightarrow (-4, -18)$$

$$x_2 = 4 \rightarrow y_2 = 4 + \frac{16}{4} - 10 = -2 \rightarrow (4, -2)$$

:( )

$$f'(-5) = (-5)^2 - 16 > 0, \quad f'(-3) = (-3)^2 - 16 < 0$$

$$f'(3) = 3^2 - 16 < 0, \quad f'(5) = 5^2 - 16 > 0$$

-5	-4	-3	0	3	4	5	x
+	0	-		-	0	+	y'
↖	Max	↘		↘	Min	↖	

$$\begin{aligned} & \cdot (4, -2), \quad (-4, -18) : \\ \cdot B - A \quad x - \quad & g(x) = 1 - 4x^2 \\ & : \quad y = 0 \end{aligned}$$

$$0 = 1 - 4x^2$$

$$4x^2 = 1$$

$$x^2 = 0.25$$

$$x_B = 0.5 \rightarrow \boxed{B(0.5, 0)}$$

$$x_A = -0.5 \rightarrow \boxed{A(-0.5, 0)}$$

$$B(0.5, 0), A(-0.5, 0) :$$

• A (1) .

$$\boxed{f'(x) = -8x}$$

$$m(x = -0.5) = -8 \cdot (-0.5) = 4$$

$$A(-0.5, 0), m = 4$$

$$y - 0 = 4(x + 0.5)$$

$$\boxed{y = 4x + 2}$$

$$\cdot y = 4x + 2 \quad A \quad :$$

• B (2)

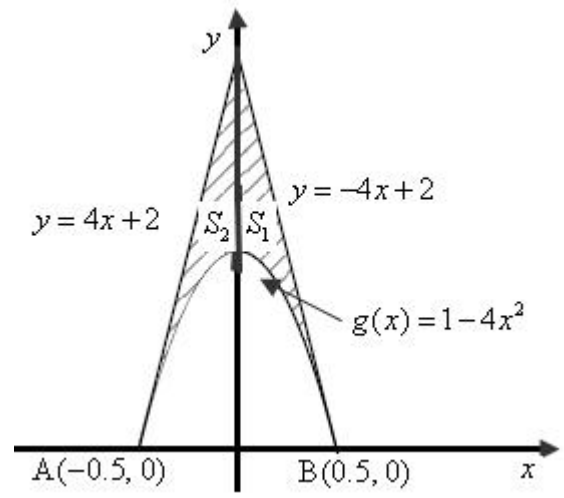
$$m(x = 0.5) = -8 \cdot 0.5 = -4$$

$$B(0.5, 0), m = -4$$

$$y - 0 = -4(x - 0.5)$$

$$\boxed{y = -4x + 2}$$

$$\cdot y = -4x + 2 \quad B \quad :$$



$S_2$	$S_1$	
$y = 4x + 2$	$y = -4x + 2$	
$g(x) = 1 - 4x^2$	$g(x) = 1 - 4x^2$	
$x = 0$	$x = 0.5$	$x$
$x = -0.5$	$x = 0$	$x$

$$S_2 = \int_{-0.5}^0 (4x + 2 - (1 - 4x^2)) dx$$

$$S_2 = \int_{-0.5}^0 (4x + 2 - 1 + 4x^2) dx$$

$$S_2 = \int_{-0.5}^0 (4x + 1 + 4x^2) dx$$

$$S_2 = \left[ \frac{4x^2}{2} + x + \frac{4x^3}{3} \right]_{-0.5}^0$$

$$S_2 = (2 \cdot 0^2 - 0 + \frac{4 \cdot 0^3}{3}) - (2 \cdot (-0.5)^2 - 0.5 + \frac{4 \cdot (-0.5)^3}{3})$$

$$S_2 = 0 - (-\frac{1}{6})$$

$$\boxed{S_2 = \frac{1}{6}}$$

$$S_1 = \int_0^{0.5} (-4x + 2 - (1 - 4x^2)) dx$$

$$S_1 = \int_0^{0.5} (-4x + 2 - 1 + 4x^2) dx$$

$$S_1 = \int_0^{0.5} (-4x + 1 + 4x^2) dx$$

$$S_1 = \left[ \frac{-4x^2}{2} + x + \frac{4x^3}{3} \right]_0^{0.5}$$

$$S_1 = (-2 \cdot 0.5^2 + 0.5 + \frac{4 \cdot 0.5^3}{3}) - (-2 \cdot 0^2 + 0 + \frac{4 \cdot 0^3}{3})$$

$$S_1 = \frac{1}{6} - 0$$

$$\boxed{S_1 = \frac{1}{6}}$$

$$\frac{1}{6} + \frac{1}{6} = \frac{1}{3}$$

$$\cdot \frac{1}{3}$$

"

$$B(x, \sqrt{x}) \quad f(x) = \sqrt{x} \quad B$$

$$(AB)^2 : , AB \quad \text{פונ'קציה}$$

$$: \quad AB^2$$

$$(AB)^2 = (x - 9.5)^2 + (\sqrt{x} - 0)^2$$

$$(AB)^2 = (x - 9.5)(x - 9.5) + x$$

$$(AB)^2 = x^2 - 9.5x - 9.5x + 90.25 + x$$

$$\boxed{(AB)^2 = x^2 - 18x + 90.25}$$

$$: AB^2 = x^2 - 18x + 90.25 \quad \text{פונ'קציה}$$

$$\boxed{(AB^2)' = 2x - 18}$$

$$0 = 2x - 18$$

$$-2x = -18 \quad /: (-2)$$

$$\boxed{x = 9}$$

$$(AB^2)'(8) = 2 \cdot 8 - 18 < 0, \quad (AB^2)'(10) = 2 \cdot 10 - 18 > 0$$

8	9	10	$x$
-	0	+	$(AB^2)'$
↘	<b>Min</b>	↗	

$$: AB \quad x = 9 \quad :$$

$$. AB$$

$$. y_B = \sqrt{9} = 3 \rightarrow B(9, 3) \quad B$$

$$(AB)^2 = (9 - 9.5)^2 + (3 - 0)^2$$

$$(AB)^2 = (-0.5)^2 + (3)^2$$

$$\boxed{(AB)^2 = 9.25}$$

$$: (AB)^2$$

$$(AB)^2 = x^2 - 18x + 90.25$$

$$(AB)^2 = 9^2 - 18 \cdot 9 + 90.25 = 9.25$$

$$. 9.25 \quad AB \quad :$$

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$$f'(x) = ax + 4 \quad f(x)$$

$$m = 6 \quad , y = 6x + 1 \quad , x = 1 \quad f(x)$$

$$6 \quad x = 1 \quad f(x) \quad ,$$

$$: \quad f'(1) = 6$$

$$6 = a \cdot 1 + 4$$

$$\boxed{a = 2}$$

$$a = 2 :$$

$$f'(x) = 2x + 4 :$$

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

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

$$f(x) = \int (2x + 4) dx$$

$$f(x) = \frac{2x^2}{2} + 4x + c$$

$$\boxed{f(x) = x^2 + 4x + c}$$

$$: \quad x(-6, 0) - \quad f(x)$$

$$0 = (-6)^2 + 4 \cdot (-6) + c$$

$$0 = 12 + c$$

$$c = -12$$

$$\boxed{f(x) = x^2 + 4x - 12}$$

$$f(x) = x^2 + 4x - 12 :$$

$$: x - \quad f(x)$$

$$0 = x^2 + 4x - 12$$

$$x_{1,2} = \frac{-4 \pm 8}{2}$$

$$x_1 = \frac{-4 + 8}{2} = \frac{4}{2} = 2 \rightarrow \boxed{(2, 0)}$$

$$x_2 = \frac{-4 - 8}{2} = \frac{-12}{2} = -6 ,$$

$$(2, 0) :$$