

35003

12

.() y - () x - .

2 - 3
, x-2 2 -

$$\frac{100-25}{100} \cdot y = 0.75y \quad 25\% -$$

3x	x	3		
2y	y	2		
3(x-2)	x-2	3		
2 · 0.75y = 1.5y	0.75y	2		

$$3x + 2y = 52 :$$

$$52 - 10 = 42 , 10$$

$$3(x-2) + 1.5y = 42 :$$

:

$$\begin{cases} 3x + 2y = 52 \\ 3(x-2) + 1.5y = 42 \end{cases}$$

$$\begin{cases} 3x + 2y = 52 \\ 3x - 6 + 1.5y = 42 \end{cases}$$

$$\begin{cases} 3x + 2y = 52 \\ 3x + 1.5y = 48 \quad / \cdot (-1) \end{cases}$$

$$+ \begin{cases} 3x + 2y = 52 \\ -3x - 1.5y = -48 \end{cases}$$

$$0.5y = 4 \quad / : 0.5$$

$$\boxed{y = 8}$$

$$3x + 2 \cdot 8 = 52$$

$$3x = 36 \quad / : 3$$

$$\boxed{x = 12}$$

. 8

12

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. 12 2 - , .

$$\frac{2}{12} \cdot 100 = 16.67\%$$

.16.67% - :

$$, \frac{1}{2} \quad y = \frac{1}{2}x$$

$$\frac{1}{2}m_{MA} = -1 \rightarrow m_{MA} = \frac{-1}{\frac{1}{2}} \rightarrow m_{MA} = -2$$

$$y - 3 = -2(x - 6) \rightarrow y - 3 = 2x + 12 \rightarrow \boxed{y = -2x + 15} \text{ AM}$$

$$. y = -2x + 15 \quad \text{AM}$$

$$. y = 7$$

$$, y = -2x + 15$$

$$y = 7$$

$$7 = -2x + 15$$

$$2x = 8$$

$$x = 4 \rightarrow M(4, 7)$$

:

$$. R = \sqrt{(4-6)^2 + (7-3)^2} = \sqrt{20}$$

$$. (x-4)^2 + (y-7)^2 = 20$$

:

. DC

$$. x = 0$$

, y -

$$D - C$$

$$(0-4)^2 + (y-7)^2 = 20 \rightarrow 16 + (y-7)(y-7) = 20$$

$$16 + y^2 - 7y - 7y + 49 = 20 \rightarrow$$

$$y^2 - 14y + 45 = 0 \rightarrow y_{1,2} = \frac{14 \pm 4}{2}$$

$$y_1 = \frac{14+4}{2} = \frac{18}{2} = 9 \rightarrow C(0, 9)$$

$$y_2 = \frac{14-4}{2} = \frac{10}{2} = 5 \rightarrow D(0, 5)$$

$$. DC = 9 - 5 = 4$$

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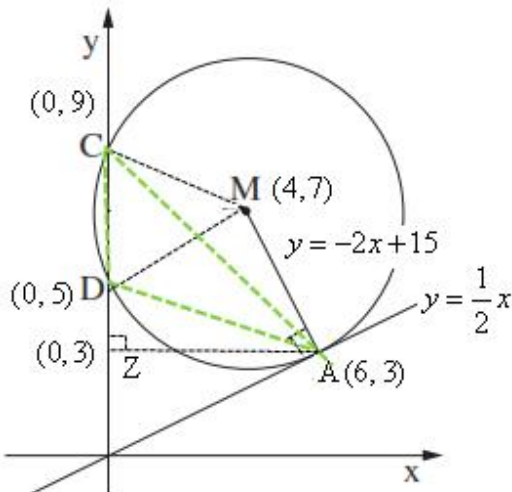
$$AZ = x_A - x_Z = 6 - 0 = 6$$

$$S_{\Delta ADC} = \frac{DC \cdot AZ}{2} = \frac{4 \cdot 6}{2} = 12 \rightarrow \boxed{S_{\Delta ADC} = 12}$$

. " 12 ADC

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$$f(x) = x - \frac{1}{x}$$

$$x = 0, x \neq 0$$

$$x \neq 0 :$$

$$y = 0 \quad x =$$

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

$$0 = x^2 - 1$$

$$1 = x^2$$

$$x = \pm 1 \rightarrow (1, 0), (-1, 0)$$

$$(1, 0), (-1, 0) :$$

(1)

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

$$0 = 1 + \frac{1}{x^2} \rightarrow 0 = x^2 + 1$$

$$x^2 = -1$$

(2)

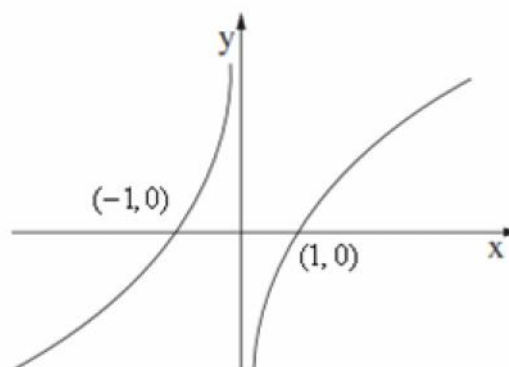
$$f'(1) = 1 + \frac{1}{1^2} = 2 > 0, \quad f'(-1) = 1 + \frac{1}{(-1)^2} = 2 > 0$$

-1	0	1	x
+		+	y'
↗		↗	

$$x < 0$$

$$x > 0$$

:



(1, 0) , , (1) .

$$.m = f'(1) = 1 + \frac{1}{1^2} = 2 :$$

$$y - 0 = 2(x - 1) \rightarrow y = 2x - 2 :$$

$$.y = 2x - 2 :$$

,2

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(2)

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

$$1 = \frac{1}{x^2}$$

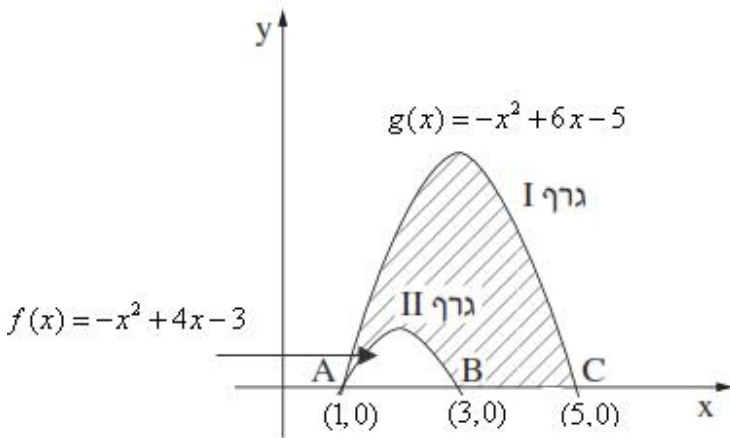
$$x^2 = 1$$

$$x = \pm 1$$

.-(-1,0)

$$y - 0 = 2(x - (-1)) \rightarrow y = 2x + 2 :$$

$$.y = 2x + 2 :$$



$$f(x) = -x^2 + 4x - 3$$

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

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

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

$$x_1 = \frac{4+2}{2} = \frac{6}{2} = 3 \rightarrow (3, 0)$$

$$x_2 = \frac{4-2}{2} = \frac{2}{2} = 1 \rightarrow (1, 0)$$

$$g(x) = -x^2 + 6x - 5$$

$$0 = -x^2 + 6x - 5$$

$$x^2 - 6x + 5 = 0$$

$$x_{1,2} = \frac{6 \pm 4}{2}$$

$$x_1 = \frac{6+4}{2} = \frac{10}{2} = 5 \rightarrow (5, 0)$$

$$x_2 = \frac{6-4}{2} = \frac{2}{2} = 1 \rightarrow (1, 0)$$

. C(5,0) , B(3,0) , A(1,0) :

. II B(3,0) , A(1,0)

x - f(x) = -x^2 + 4x - 3 .

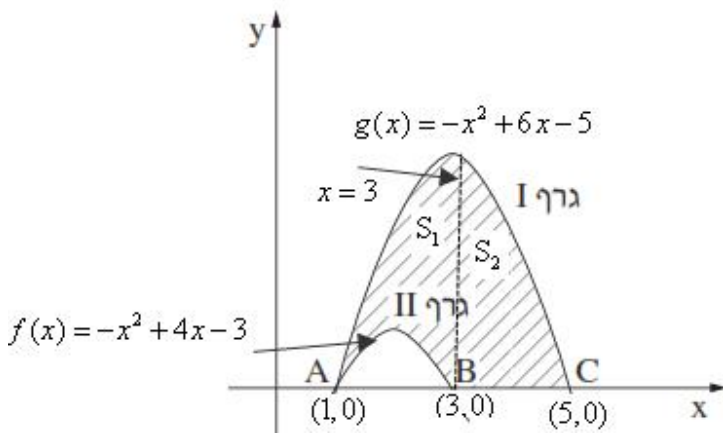
. I C(5,0) , A(1,0)

x - g(x) = -x^2 + 6x - 5

. g(x)

I , f(x) II :

. y - , B(3,0) , x=3 " , .



- S₁

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$$\begin{aligned} &(-x^2 + 6x - 5) - (-x^2 + 4x - 3) = \\ &-x^2 + 6x - 5 + x^2 - 4x + 3 = \\ &2x - 2 \end{aligned}$$

$$S_1 = \int_1^3 (2x - 2) dx$$

$$S_1 = \left[\frac{2x^2}{2} - 2x \right]_1^3$$

$$S_1 = (3^2 - 2 \cdot 3) - (1^2 - 2 \cdot 1)$$

$$S_1 = 3 - (-1)$$

$$S_1 = 4$$

- S₂

$$(-x^2 + 6x - 5) - (0) = -x^2 + 6x - 5$$

$$S_2 = \int_3^5 (-x^2 + 6x - 5) dx$$

$$S_2 = \left[-\frac{x^3}{3} + \frac{6x^2}{2} - 5x \right]_3^5$$

$$S_2 = \left(-\frac{5^3}{3} + 3 \cdot 5^2 - 5 \cdot 5 \right) - \left(-\frac{3^3}{3} + 3 \cdot 3^2 - 5 \cdot 3 \right)$$

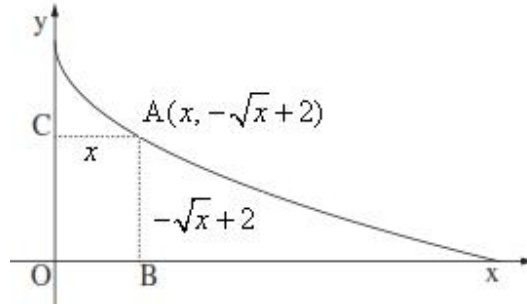
$$S_2 = 8\frac{1}{3} - 3$$

$$S_2 = 5\frac{1}{3}$$

$$5\frac{1}{3} + 4 = 9\frac{1}{3} :$$

$$. " 9\frac{1}{3} :$$

$\cdot A(x, -\sqrt{x}+2)$ $f(x) = -\sqrt{x}+2$ A
 $\cdot -\sqrt{x}+2-0 = -\sqrt{x}+2$ y - AB
 $\cdot x-0 = x$ x - AC



$$2x + 2(-\sqrt{x} + 2) = 2x - 2\sqrt{x} + 4$$

$$\cdot 2x - 2\sqrt{x} + 4 \quad \text{ABOC} \quad :$$

מינימום היקף המלבן ABOC (1).

$$P(x) = 2x - 2\sqrt{x} + 4$$

$$P'(x) = 2 - \frac{1}{\sqrt{x}}$$

$$P'(x) = 2 - \frac{1}{\sqrt{x}}$$

$$0 = 2 - \frac{1}{\sqrt{x}}$$

$$\frac{1}{\sqrt{x}} = 2 \quad ()^2$$

$$\frac{1}{x} = 4$$

$$x = 0.25$$

$$P'(0.2) = 2 - \frac{1}{\sqrt{0.2}} = -0.24 < 0, \quad P'(0.3) = 2 - \frac{1}{\sqrt{0.3}} = 0.17 > 0 \quad :$$

0.2	0.25	0.3	x
-	0	+	P'(x)
↘	Min	↗	

ABOC $x = 0.25$:

$$P(0.25) = 2 \cdot 0.25 - 2\sqrt{0.25} + 4 = 3.5 \quad ; \quad x = 0.25 \quad (2)$$

3.5 ABOC :

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

$x =$

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

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

$$0 = 3x(x - 4)$$

$$x = 0, \quad x = 4$$

$$f'(5) = 3 \cdot 5^2 - 12 \cdot 5 = 15 > 0$$

$$f'(1) = 3 \cdot 1^2 - 12 \cdot 1 = -9 < 0$$

$$f'(-1) = 3 \cdot (-1)^2 - 12 \cdot (-1) = 15 > 0$$

-1	0	1	4	5	x
+	0	-	0	+	P'
↖	Max	↘	Min	↖	

$$x = 4, \quad x = 0 :$$

$$(-9) \quad y = -9x + 3$$

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

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

$$x_{1,2} = \frac{12 \pm 6}{6} \rightarrow x = \frac{12-6}{6} = 1, \quad x = \frac{12+6}{6} = 3$$

$$. x = 3 \quad x = 1 :$$

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

$$, x = 1$$

$$. y = -9 \cdot 1 + 3 = -6 \rightarrow (1, -6)$$

$$-6 = 1^3 - 6 \cdot 1^2 + c \rightarrow -6 = -5 + c \rightarrow \boxed{c = -1}$$

$$. c = -1 :$$