

$$\cdot R \quad M(2, 6)$$

$$\cdot (x-2)^2 + (y-6)^2 = R^2$$

$$\cdot M(2, 6) -$$

$$A(0, 2) \quad y -$$

$$R = \sqrt{(2-0)^2 + (6-2)^2}$$

$$R = \sqrt{4+16}$$

$$R = \sqrt{20}$$

$$\cdot R = \sqrt{20} :$$

$$\cdot (x-2)^2 + (y-6)^2 = 20$$

$$\cdot AB \quad M(2, 6)$$

$$\left. \begin{array}{l} 2 = \frac{0+x_B}{2} \quad 6 = \frac{2+y_A}{2} \\ 4 = x_B \quad 12 = 2+y_A \\ 10 = y_A \end{array} \right\} \boxed{B(4, 10)}$$

$$\cdot B(4, 10) :$$

$$\cdot AB$$

$$\cdot m_{AM} = \frac{6-2}{2-0} = \frac{4}{2} = 2 : A(0, 2) - M(2, 6)$$

$$AB$$

$$\cdot 2 \cdot m_{MC} = -1 \rightarrow m_{MC} = \frac{-1}{2} \rightarrow m_{MC} = -\frac{1}{2}$$

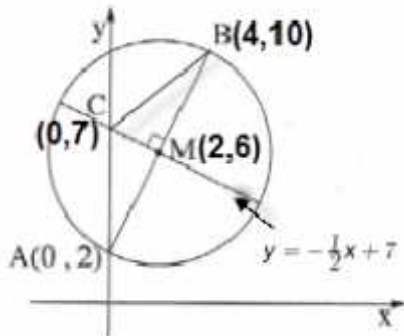
$$y-6 = -\frac{1}{2}(x-2)$$

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

$$\boxed{y = -\frac{1}{2}x+7}$$

$$\cdot y = -\frac{1}{2}x+7$$

:



• $x_C = 0$, C y - .

$$y_C = -\frac{1}{2} \cdot 0 + 7 = 7 \rightarrow C(0, 7)$$

$$\sqrt{20}$$

MB

BMC

$$MC = \sqrt{(2-0)^2 + (6-7)^2} = \sqrt{4+1} = \sqrt{5}$$

$$S_{\Delta BMC} = \frac{BM \cdot MC}{2} = \frac{\sqrt{20} \cdot \sqrt{5}}{2} = 5$$

• 5 BMC :

• ABC
• $y_D = 0$

, D

B(4, 0)
x -

4 , x -

, $y = -6x + 48$

, B

x -

AB

: $y = 0$

$$0 = -6x + 48 \quad / +6x$$

$$6x = 48 \quad / :6$$

$$x = 8 \rightarrow \boxed{D(8, 0)}$$

, BC

D(8, 0)

x -

. x -

C , $y_C = 0$

$$\frac{2 \cdot 8}{1} = \frac{1 \cdot 4 + x_C}{2} \quad / \cdot 2$$

$$16 = 4 + x_C \quad / -4$$

$$12 = x_C \rightarrow \boxed{C(12, 0)}$$

. C(12, 0) , D(8, 0) :

. $y_A = 12$

: $y = 12$ **(1)**

$$12 = -6x + 48 \quad / +6x - 12$$

$$6x = 36 \quad / :6$$

$$x = 6 \rightarrow \boxed{x_A = 6}, A(6, 12)$$

. $x_A = 6$:

: AC **(2)**

. C(12, 0) , A(6, 12)

$$. m_{AC} = \frac{12 - 0}{6 - 12} = \frac{12}{-6} = -2$$

$$y - 0 = -2(x - 12)$$

$$\boxed{y = -2x + 24}$$

. $y = -2x + 24$ AC :

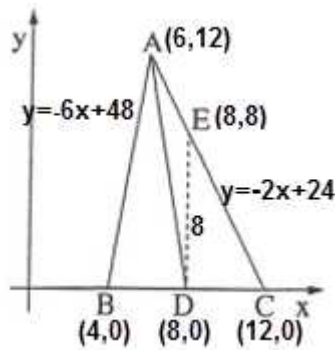
: $x_E = x_D = 8$, x - DE **(3)**

. AC $x = 8$

$$y_E = -2 \cdot 8 + 24 = 8$$

$$DE = y_E - y_D = 8 - 0 = 8$$

. 8 DE :



$$y = 2x^2 + \frac{32}{x} - 2$$

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

$x \neq 0$:

$$y = 2x^2 + \frac{32}{x} - 2$$

$$y' = 4x - \frac{32}{x^2}$$

$$0 = \frac{x^2/4x - 1/32}{1 - x^2} \cdot x^2$$

$$0 = 4x^3 - 32 \quad / +32$$

$$4x^3 = 32 \quad / :4$$

$$x^3 = 8$$

$$x = \sqrt[3]{8} \rightarrow x = 2 \rightarrow y = 2 \cdot 2^2 + \frac{32}{2} - 2 = 22 \rightarrow (2, 22)$$

.(')

$$y'(-1) = 4 \cdot (-1) - \frac{32}{(-1)^2} < 0,$$

$$y'(1) = 4 \cdot 1 - \frac{32}{1^2} < 0,$$

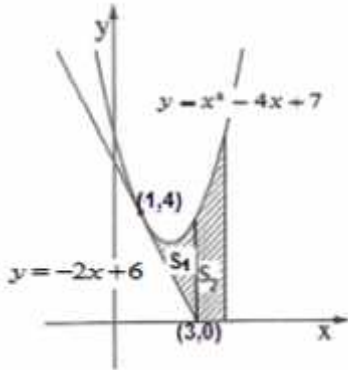
$$y'(3) = 4 \cdot 3 - \frac{32}{3^2} > 0$$

-0.5	0	1	2	3	x
-1	x ≠ 0	-	0	+	y'
↘		↘	Min	↗	

$$x = 2 -$$

(2, 22) :

$$x < 0 \quad 0 < x < 2 : \quad , x > 2 :$$



• -2

$$y = x^2 - 4x + 7$$

$$y' = 2x - 4$$

$$-2 = 2x - 4 \quad / +4$$

$$2 = 2x$$

$$1 = x$$

$$• y = 1^2 - 4 \cdot 1 + 7 = 4 \quad x = 1$$

$$• (1, 4)$$

$$y - 4 = -2(x - 1)$$

$$y - 4 = -2x + 2 \quad / +4$$

$$\boxed{y = -2x + 6}$$

$$• y = -2x + 6 \quad :$$

$$• y = 0 \quad x = \quad (1) •$$

$$0 = -2x + 6 \quad / +2x$$

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

$$x = 3 \rightarrow \boxed{(3, 0)}$$

$$• (3, 0) :$$

:

$$x = 3 \quad (3, 0) \quad •$$

$$S_1 = \int_1^3 (x^2 - 4x + 7 - (-2x + 6)) dx$$

$$S_1 = \int_1^3 (x^2 - 4x + 7 + 2x - 6) dx$$

$$S_1 = \int_1^3 (x^2 - 2x + 1) dx$$

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

$$S_1 = \left(\frac{3^3}{3} - \frac{2 \cdot 3^2}{2} + 3 \right) - \left(\frac{1^3}{3} - \frac{2 \cdot 1^2}{2} + 1 \right)$$

$$S_1 = 3 - \frac{1}{3} \rightarrow \boxed{S_1 = 2\frac{2}{3}}$$

S_1	S_2	
$y = x^2 - 4x + 7$	$y = x^2 - 4x + 7$	
$y = -2x + 6$	$y = 0$	
$x = 3$	$x = 4$	x
$x = 1$	$x = 3$	x

$$S_2 = \int_3^4 (x^2 - 4x + 7 - 0) dx = \left[\frac{x^3}{3} - \frac{4x^2}{2} + 7x \right]_3^4$$

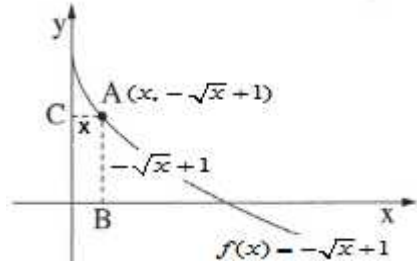
$$S_2 = \left(\frac{4^3}{3} - \frac{4 \cdot 4^2}{2} + 7 \cdot 4 \right) - \left(\frac{3^3}{3} - \frac{4 \cdot 3^2}{2} + 7 \cdot 3 \right)$$

$$S_2 = \frac{52}{3} - 12 \rightarrow \boxed{S_2 = 5\frac{1}{3}}$$

$$S = S_1 + S_2 = 2\frac{2}{3} + 5\frac{1}{3} = 8 :$$

.8 :

$A(x, -\sqrt{x}+1)$ $f(x) = -\sqrt{x}+1$ A
 $-\sqrt{x}+1-0 = -\sqrt{x}+1$ y - AB
 $x-0 = x$ x - AC



$x + (-\sqrt{x}+1) = x - \sqrt{x} + 1 : AB + AC$
 $x - \sqrt{x} + 1$ AB + AC :

מנימוק סכום האורכים AB + AC

$P(x) = x - \sqrt{x} + 1$

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

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

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

$\frac{1}{4x} = 1 \quad / \cdot 4x$

$1 = 4x \quad / : 4$

$x = 0.25$

:

$P'(0.2) = 1 - \frac{1}{2\sqrt{0.2}} = -0.12 < 0$, $P'(0.3) = 1 - \frac{1}{2\sqrt{0.3}} = 0.09 > 0$

0	0.2	0.25	0.3	x
	-	0	+	P'(x)
	↘	Min	↗	

$AB + AC$ $x_A = 0.25$: