

() - x
 () - y
 , 120% - x - , 20%
 . $120\% x = \frac{120}{100} x = 1.2x$
 , 90% - y - , 10%
 . $90\% y = \frac{90}{100} y = 0.9y$

()	()	()		
3x	x	3		
y	y	1		
$5 \cdot 1.2x = 6x$	1.2x	5		
$5 \cdot 0.9y = 4.5y$	0.9y	5		

$.3x + y = 20.5$: , 20.5 , ,
 $.6x + 4.5y = 51$: , 51 , ,
 :

$$\begin{cases} 3x + y = 20.5 & / \cdot (-2) \\ 6x + 4.5y = 51 \end{cases}$$

$$+ \begin{cases} -6x - 2y = -41 \\ 6x + 4.5y = 51 \end{cases}$$

$$2.5y = 10 \quad / : 2.5$$

$$y = 4 \rightarrow 3x + 4 = 20.5 \rightarrow 3x = 16.5 \quad / : 3 \rightarrow \boxed{x = 5.5}$$

. 5.5 1 :

$.1.2 \cdot 5.5 = 6.6$ _____ 1 .
 $.66 : 6.6 = 10$: 66 -
 . 66 - , 10 :

$0 = -2x - 4 \rightarrow 2x = -4 \rightarrow x = -2 \rightarrow \boxed{C(-2, 0)}$, $y = 0$, $x = -$, $y = -2x - 4$ AC (1) .

$\cdot y - 0 = \frac{1}{2}(x - (-2)) \rightarrow \boxed{y = \frac{1}{2}x + 1}$ BC
 $\cdot C(-2, 0) : \angle C = 90^\circ$ (2)
 $\cdot m_{BC} \cdot (-2) = -1 \rightarrow m_{BC} = \frac{1}{2}$

$\cdot y = \frac{1}{2}x + 1$ BC :
 $\cdot BC$ x 4 4 B x - (3)

$\cdot y = \frac{1}{2} \cdot 4 + 1 = 3 \rightarrow \boxed{B(4, 3)}$

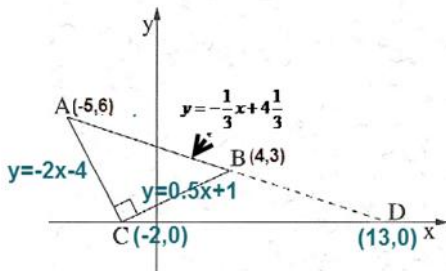
$\cdot B(4, 3) :$

$\cdot m_{BD} = \frac{3-0}{4-13} = \frac{3}{-9} = -\frac{1}{3} : D(13, 0) - B(4, 3)$, BD (1) .

$\cdot m_{BD} = -\frac{1}{3}$, D(13, 0) , BD

$y - 0 = -\frac{1}{3}(x - 13)$

$\boxed{y = -\frac{1}{3}x + 4\frac{1}{3}}$



$\cdot y = -\frac{1}{3}x + 4\frac{1}{3}$ BD :

$\cdot AC$ BD , A (2)

$$\begin{cases} y = -2x - 4 \\ y = -\frac{1}{3}x + 4\frac{1}{3} \end{cases}$$

$$-2x - 4 = -\frac{1}{3}x + 4\frac{1}{3}$$

$$-1\frac{2}{3}x = 8\frac{1}{3} \quad /: (-1\frac{2}{3}x)$$

$\boxed{x = -5} \rightarrow y = -2 \cdot (-5) - 4 \rightarrow y = 6 \rightarrow A(-5, 6)$

$\cdot D(13, 0)$, $A(-5, 6) -$

$\cdot AD$ B

$\cdot AD$

B

$$x = \frac{-5+13}{2} = \frac{8}{2} = 4 = x_D, \quad y = \frac{6+0}{2} = \frac{6}{2} = 3 = y_D$$

$\cdot AD$

B

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$$f(x) = 3x - \frac{12}{x}$$

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

. $x \neq 0$:

$$y = 0 \quad x -$$

$$3x - \frac{12}{x} = 0 \quad / \cdot x$$

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

$$3x^2 = 12 \quad / : 3$$

$$x^2 = 4$$

$$x_1 = 2 \rightarrow \boxed{(2, 0)}$$

$$x_2 = -2 \rightarrow \boxed{(-2, 0)}$$

. $(-2, 0), (2, 0)$:. $(-2, 0), (2, 0)$

$$\boxed{f'(x) = 3 + \frac{12}{x^2}}$$

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

$$f'(-2) = 3 + \frac{12}{(-2)^2} = 6$$

$$m = 6, \quad \begin{matrix} x_1 & y_1 \\ (-2, & 0) \end{matrix}$$

$$y - 0 = 6(x - (-2))$$

$$y = 6(x + 2)$$

$$\boxed{y = 6x + 12}$$

$$f'(2) = 3 + \frac{12}{2^2} = 6$$

$$m = 6, \quad \begin{matrix} x_1 & y_1 \\ (2, & 0) \end{matrix}$$

$$y - 0 = 6(x - 2)$$

$$\boxed{y = 6x - 12}$$

. $y = 6x + 12, y = 6x - 12$:

, (6)

$$f'(x) = 3 + \frac{12}{x^2}$$

. $(x \neq 0) \quad x \quad f'(x) > 0$,

$$\cdot y = x^2 - 2x + 2$$

, M ,

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

$$0 = 2x - 2$$

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

$$x = 1 \rightarrow \boxed{M(1, 1)} \leftarrow y_M = 1^2 - 2 \cdot 1 + 2 = 1$$

. B - A

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

$$x^2 - 2x + 2 = x + 2$$

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

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

$$x_A = 0 \rightarrow y_A = 0 + 2 = 2 \rightarrow \boxed{A(0, 2)}$$

$$x_B = 3 \rightarrow y_B = 3 + 2 = 5 \rightarrow \boxed{B(3, 5)}$$

$$\cdot y_C = 0$$

, C

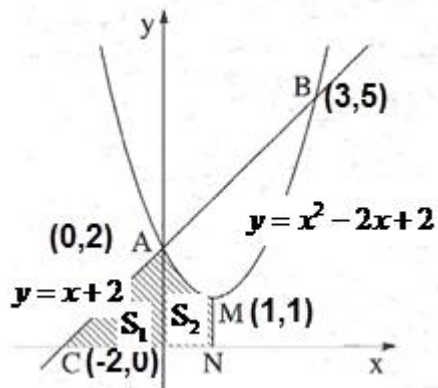
x -

$$y = x + 2$$

$$0 = x + 2$$

$$x = -2 \rightarrow \boxed{C(-2, 0)}$$

. C(-2, 0) , B(3, 5) , A(0, 2) , M(1, 1) :



• y -

- S₁

$$S_1 = \frac{2 \cdot 2}{2} = 2$$

- S₂

$$x^2 - 2x + 2 - 0 = x^2 - 2x + 2 :$$

$$S_2 = \int_0^1 (x^2 - 2x + 2) dx$$

$$S_2 = \left[\frac{x^3}{3} - \frac{2x^2}{2} + 2x \right]_0^1$$

$$S_2 = \left(\frac{1^3}{3} - \frac{2 \cdot 1^2}{2} + 2 \cdot 1 \right) - \left(\frac{0^3}{3} - \frac{2 \cdot 0^2}{2} + 2 \cdot 0 \right)$$

$$S_2 = 1 \frac{1}{3} - 0$$

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

$$2 + 1 \frac{1}{3} = 3 \frac{1}{3} :$$

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

. II $a = -\frac{1}{2} < 0$, (" ") $f(x) = -\frac{1}{2} \cdot x^2 + 5x - 15$.

. I $a = 1 > 0$, (" ") $g(x) = x^2 - x - 2$

. I - $g(x) = x^2 - x - 2$, II - $f(x) = -\frac{1}{2} \cdot x^2 + 5x + 15$:

. x - P x - .

. $P(x, x^2 - x - 2)$, $g(x) = x^2 - x - 2$, P

. Q - P x - y - PQ

. $Q(x, -\frac{1}{2}x^2 + 5x - 15)$ Q

. PQ **מינימום אורך הקטע**

: $PQ = y_P - y_Q$: , y - PQ

$PQ = x^2 - x - 2 - (-\frac{1}{2}x^2 + 5x - 15)$

$PQ = x^2 - x - 2 + \frac{1}{2}x^2 - 5x + 15$

$PQ = 1\frac{1}{2}x^2 - 6x + 13$

: PQ

$PQ = 1\frac{1}{2}x^2 - 6x - 17$

$(PQ)' = 3x - 6$

$0 = 3x - 6$

$-3x = -6 \quad /: (-3)$

$x = 2$

:

$(PQ)'(1) = 3 \cdot 1 - 6 < 0$, $(PQ)'(3) = 3 \cdot 3 - 3 > 0$

1	2	3	x
-	0	+	(PQ)'
↘	Min	↗	

. $x = 2$:

"

