

35803

12

.()

- x .

1200 , x , (1)

$$\frac{1200}{x}$$

$$\frac{1200}{x} :$$

$$\frac{1200}{x} + 20 , 20 -$$

$$\frac{100-10}{100} \cdot x = 0.9x , 10%$$

420 -

$$1,200 + 420 = 1,620$$

$$0.9x \cdot \left(\frac{1200}{x} + 20\right) = 1620 :$$

:

$$0.9x \cdot \left(\frac{1200}{x} + 20\right) = 1620$$

$$1080 + 18x = 1620$$

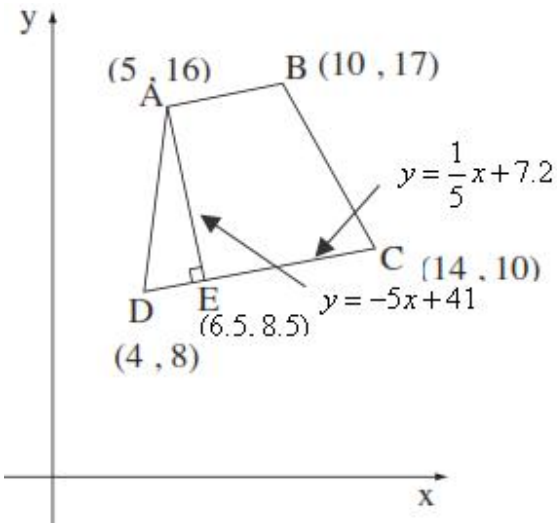
$$18x = 540 \quad / : (18)$$

$$\boxed{x = 30}$$

30 :

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12



ABCD

D(4, 8), C(14, 10), B(10, 17), A(5, 16) :

(1)

$$m_{BC} = \frac{17-10}{10-14} = \frac{7}{-4} = -1.75, m_{AB} = \frac{17-16}{10-5} = \frac{1}{5}$$

$$m_{AD} = \frac{16-8}{5-4} = \frac{8}{1} = 8, m_{CD} = \frac{10-8}{14-4} = \frac{2}{10} = \frac{1}{5}$$

$$m_{AD} = 8, m_{CD} = \frac{1}{5}, m_{BC} = -1.75, m_{AB} = \frac{1}{5} :$$

$$AD \not\parallel BC \quad m_{AD} \neq m_{BC} \quad AB \parallel CD \quad m_{AB} = m_{CD} = \frac{1}{5} \quad (2)$$

ABCD

AE (1)

$$\frac{1}{5}m_{AE} = -1 \rightarrow m_{AE} = \frac{-1}{\frac{1}{5}} \rightarrow m_{AE} = -5 :$$

:

$$y - 16 = -5(x - 5)$$

$$y - 16 = -5x + 25$$

$$\boxed{y = -5x + 41}$$

$$y = -5x + 41$$

AE

:

E

, CD

(2)

$$\begin{cases} y = -5x + 41 \\ y = \frac{1}{5}x + 7.2 \end{cases}$$

$$-5x + 41 = \frac{1}{5}x + 7.2$$

$$-5.2x = -33.8$$

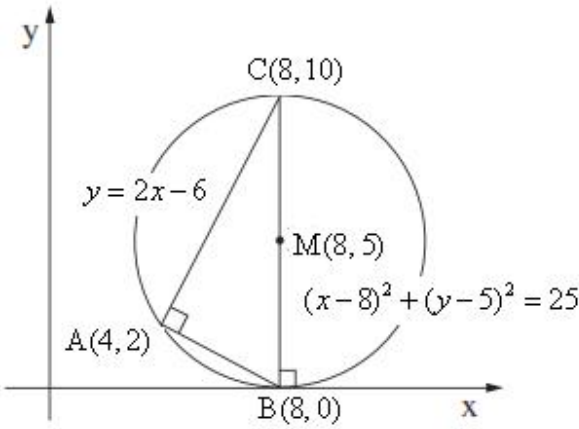
$$x = 6.5 \rightarrow y = -5 \cdot 6.5 + 41 = 8.5 \rightarrow \boxed{E(6.5, 8.5)}$$

$$y - 8 = \frac{1}{5}(x - 4)$$

$$y - 8 = \frac{1}{5}x - \frac{4}{5}$$

$$y = \frac{1}{5}x + 7.2$$

E(6.5, 8.5) :



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

$y = 0$ x -

$0 = -\frac{1}{2}x + 4$

$\frac{1}{2}x = 4$

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

. B(8, 0) :

B(8, 0) x - (2)

. $x = 8$, x -

. C(8, 10)

BC = 10

. C(8, 10) :

. $10 : 2 = 5$, (3)

. M(8, 5)

$(x-8)^2 + (y-5)^2 = 25$:

. AC , $-\frac{1}{2}$ AB (1).

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

$y - 10 = 2(x - 8) \rightarrow y - 10 = 2x - 16 \rightarrow \boxed{y = 2x - 6}$ AC

. $y = 2x - 6$ AC :

. A (2)

$$\begin{cases} y = 2x - 6 \\ y = -\frac{1}{2}x + 4 \end{cases}$$

$2x - 6 = -\frac{1}{2}x + 4$

$2\frac{1}{2}x = 10$

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

. A(4, 2) :

$(9, 0)$ $x -$, $f(x) = x - 2\sqrt{x} - 3$.
 (-) $x \geq 0$: (1)

$(0, -3)$ $f(0) = 0 - 2\sqrt{0} - 3 = -3$ $x = 0$, y (2)
 $(0, -3)$:

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

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

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

$$2\sqrt{x} = 2 \quad / : 2$$

$$\sqrt{x} = 1$$

$$x = 1 \rightarrow f(1) = 1 - 2\sqrt{1} - 3 \rightarrow (1, -4)$$

$(1, -4)$,

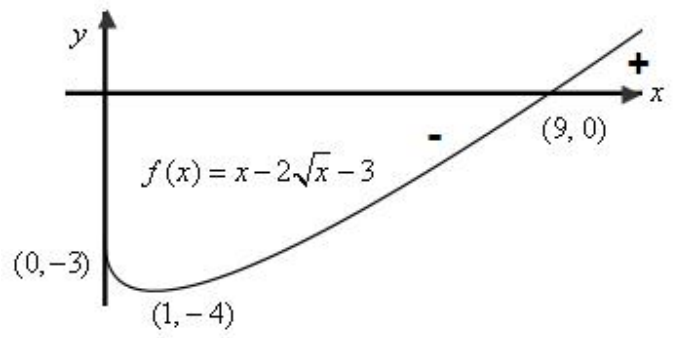
:

$$f'(0.5) = 1 - \frac{2}{2\sqrt{0.5}} = -0.41 < 0, \quad f'(2) = 1 - \frac{2}{2\sqrt{2}} = 0.29 > 0$$

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

$x = 1$

$(1, -4)$:



.9 -

-x

,x -

. x > 9

:

A

, x -

$$f(x) = -x^2 + 16$$

$$0 = -x^2 + 16$$

$$x^2 = 16$$

$$x_{1,2} = \pm 4 \rightarrow \boxed{A(4, 0)}$$

B

$$7 = -x^2 + 16$$

$$x^2 = 9$$

$$x_{1,2} = \pm 3 \rightarrow \boxed{B(3, 7)}$$

. B(3,7) , A(4, 0) :

. y - , B(3,0)

, x = 3

" ,

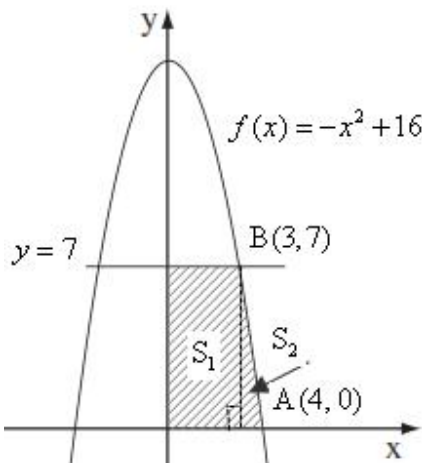
7 - 3

,

- S₁

$$S_1 = 3 \cdot 7 = 21$$

- S₂



$$(-x^2 + 16) - (0) = -x^2 + 16$$

$$S_2 = \int_3^4 (-x^2 + 16) dx$$

$$S_2 = \left[-\frac{x^3}{3} + 16x \right]_3^4$$

$$S_2 = \left(-\frac{4^3}{3} + 16 \cdot 4 \right) - \left(-\frac{3^3}{3} + 16 \cdot 3 \right)$$

$$S_2 = 42\frac{2}{3} - 39$$

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

$$21 + 3\frac{2}{3} = 24\frac{2}{3} :$$

$$. " 24\frac{2}{3} :$$

