

$$A(0, 1), B(4, 3) \quad (1)$$

$$m_{AB} = \frac{3-1}{4-0} = \frac{2}{4} = \frac{1}{2}$$

$$m_{AB} = \frac{1}{2} :$$

(2)

AD

AB

$$m_{AB} = \frac{1}{2} \rightarrow m_{AD} = -2$$

$$A(0, 1), m_{AD} = -2$$

$$AD \equiv y - 1 = -2(x - 0) \rightarrow \boxed{AD \equiv y = -2x + 1}$$

$$y = -2x + 1 \quad AD \quad :$$

$$y = -2x + 1 \quad y = -\frac{3}{4}x + 6 \quad :$$

$$-\frac{3}{4}x + 6 = -2x + 1 \rightarrow -\frac{3}{4}x + 2x = 1 - 6$$

$$1\frac{1}{4}x = -5 \quad /: (1\frac{1}{4}) \rightarrow x = -4 \rightarrow y = -2 \cdot (-4) + 1 = 9 \rightarrow \boxed{D(-4, 9)}$$

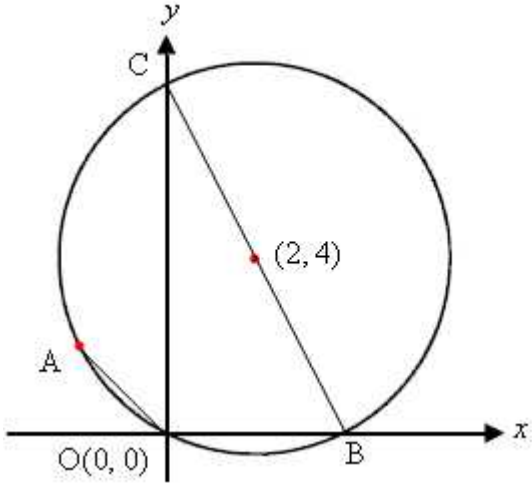
$$D(-4, 9) :$$

$$d_{AB} = \sqrt{(4-0)^2 + (3-1)^2} = \sqrt{20}$$

$$d_{AD} = \sqrt{(-4-0)^2 + (9-1)^2} = \sqrt{80}$$

$$S_{ABCD} = \sqrt{20}\sqrt{20} = 40 \rightarrow \boxed{S_{BCDD} = 40}$$

$$. \quad " \quad 40 \quad :$$



$O(0, 0), (2, 4) \quad (1)$

$$d = \sqrt{(4-0)^2 + (2-0)^2} = \sqrt{20}$$

$\therefore \sqrt{20}$

(2)

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

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

$y = 2$

$(x-2)^2 + (2-3)^2 = 20 \rightarrow (x-2)(x-2) + 1 = 20$

$x^2 - 2x - 2x + 4 + 1 = 20 \rightarrow x^2 - 4x - 15 = 0$

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

$x_A = -2 \rightarrow A(-2, 2)$

$x < 0$

$x_A = -2$

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

$x = 0$

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

$4 + y^2 - 4y - 4y + 16 = 20 \rightarrow y^2 - 8y = 0$

$y(y-8) = 0$

$y_C = 8 \quad C(0, 8), \quad y_O = 0$

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

$y = 0$

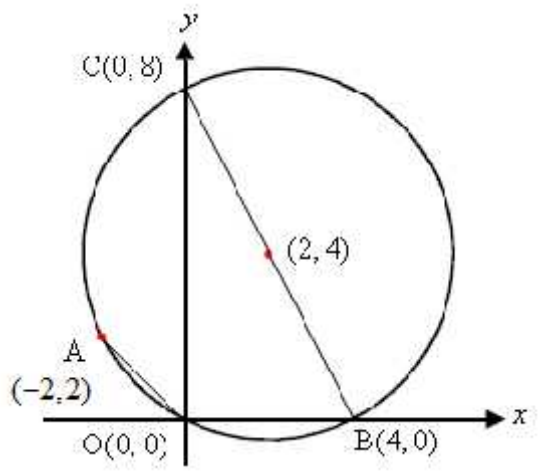
$(x-2)^2 + (0-4)^2 = 20 \rightarrow (x-2)(x-2) + 16 = 20$

$x^2 - 2x - 2x + 4 + 16 = 20 \rightarrow x^2 - 4x = 0$

$x(x-4) = 0$

$x_B = 4 \quad B(4, 0), \quad y_O = 0$

$$m_{BC} = \frac{8-0}{0-4} = \frac{8}{-4} = -2, \quad m_{AO} = \frac{2-0}{-2-0} = \frac{2}{-2} = -1$$



$(2, 4)$

$\angle COB = 90^\circ$

BC

$$\begin{array}{l}
 \text{.(")}' \\
 \text{.(")}' \\
 (t) \quad (v) \quad (s) \quad \cdot \quad s = vt
 \end{array}$$

| s | v | t | |
|------------|-------|-------|--|
| $2.5(x+1)$ | $x+1$ | 2.5 | |
| $2x$ | x | 2 | |

$$\begin{array}{l}
 \text{" } 25 \text{ ,} \\
 2.5(x+1) + 2x = 25 : \text{ ,} \\
 :
 \end{array}$$

$$2.5(x+1) + 2x = 25$$

$$2.5x + 2.5 + 2x = 25$$

$$4.5x = 22.5$$

$$\boxed{x = 5}$$

$$\text{. " } 5 \text{ ' , " } 6 \text{ ' :}$$

$$f(x) = x^3 - 6x^2 + 9x$$

$$y = 0$$

$$0 = x^3 - 6x^2 + 9x$$

$$0 = x(x^2 - 6x + 9)$$

$$x = 0 \quad x^2 - 6x + 9 = 0$$

$$\boxed{(0,0)} \quad x_{1,2} = \frac{6 \pm 0}{2}$$

$$x = 3$$

$$\boxed{(3,0)}$$

(0,0) y -

(3,0) , (0,0) :

$$\boxed{f'(x) = 3x^2 - 12x + 9}$$

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

$$x_{1,2} = \frac{12 \pm 6}{6}$$

$$x = 2 \rightarrow (3,0)$$

$$x = 1 \rightarrow (1,4) \leftarrow y = 1^3 - 6 \cdot 1^2 + 9 \cdot 1 = 4$$

| | | | | | |
|---|-----|---|-----|---|----|
| 0 | 1 | 2 | 3 | 4 | x |
| + | 0 | - | 0 | + | y' |
| ↖ | Max | ↘ | Min | ↖ | |

x = 3 - ,

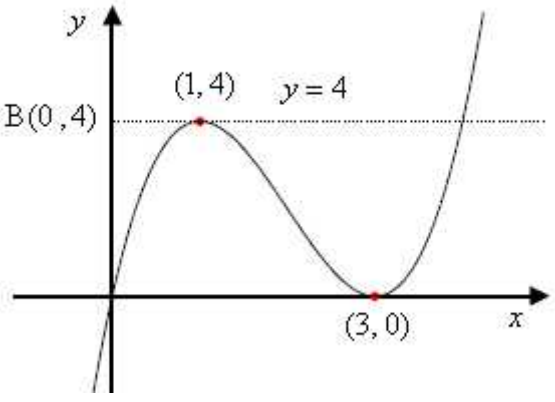
$$f'(0) = 3 \cdot 0^2 - 12 \cdot 0 + 9 > 0$$

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

$$f'(4) = 3 \cdot 4^2 - 12 \cdot 4 + 9 > 0$$

x = 1 -

(1,4) , (3,0) :



y = 4

B(0,4)

, x = 0

, y -

B(0,4) :

.24

מקסימום מכפלת מספר אחד קריבוע המספר השני.

x - , $(24-x)$.

$$f(x) = x^2(24-x)$$

$$f(x) = 24x^2 - x^3$$

$$f'(x) = 48x - 3x^2$$

$$0 = 48x - 3x^2$$

$$0 = x(48 - 3x)$$

$$\cancel{x=0} \leftarrow x > 0$$

$$48 - 3x = 0 \rightarrow 3x = 48 \rightarrow x = 16 \rightarrow 24 - 16 = 8$$

$$f'(15) = 48 \cdot 15 - 3 \cdot 15^2 > 0, \quad f'(17) = 48 \cdot 17 - 3 \cdot 17^2 < 0$$

| | | | |
|----|------------|----|---------|
| 15 | 16 | 17 | x |
| + | 0 | - | $f'(x)$ |
| ↖ | Max | ↘ | |

$x = 16$ -

,16 - 8

: