

. 80 ' 200 .

$$\frac{80}{200} = 0.4$$

.(40) 0.4 ' :

.' 20% - (1) .

$$\frac{100-20}{100} \cdot 0.4 = 0.8 \cdot 0.4 = 0.32$$

.(32) 0.32 ' :

,' () - x : (2)

84 200 ' - x :

$$x + 0.32 \cdot 200 = 84 :$$

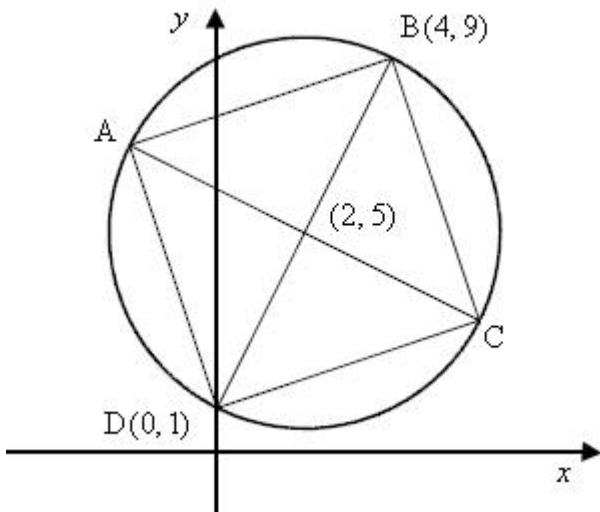
:

$$x + 0.32 \cdot 200 = 84$$

$$x + 64 = 84$$

$$x = 20$$

. 20 ' :



$$\cdot D(0, 1) \quad , (x-2)^2 + (y-5)^2 = 20 \quad \cdot$$

$$\cdot \sqrt{20} \quad (2, 5)$$

$$(2, 5) :$$

$$BD - AC - \quad \cdot$$

$$\begin{aligned} 2 &= \frac{0+x}{2} & 5 &= \frac{1+y}{2} \\ 4 &= x & 10 &= 1+y \\ & & 9 &= y \end{aligned}$$

$$B(4, 9) :$$

$$\cdot \sqrt{20} \quad , \quad \cdot$$

$$2\sqrt{20} = 8.94$$

$$\cdot 8.94 : \quad \cdot$$

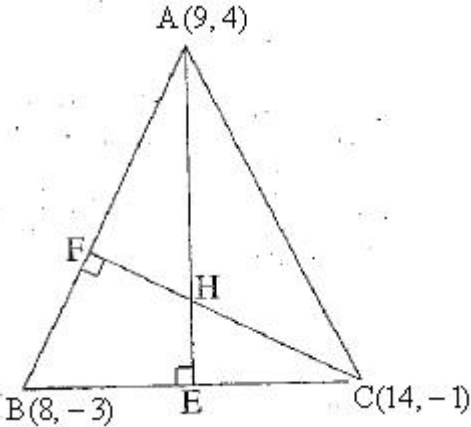
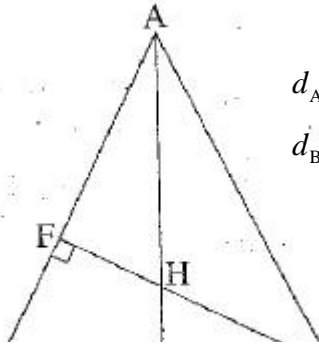
$$\cdot m_{BD} = \frac{9-1}{4-0} = \frac{8}{4} = 2 \rightarrow m_{AC} = -\frac{1}{2}$$

$$m_{AC} = -\frac{1}{2}, (2, 5) \rightarrow y-5 = -\frac{1}{2}(x-2)$$

$$y-5 = -\frac{1}{2}x+1$$

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

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



$$d_{AB} = \sqrt{(9-8)^2 + (4-(-3))^2} = \sqrt{50} \quad d_{AC} = \sqrt{(9-14)^2 + (4-(-1))^2} = \sqrt{50}$$

$$d_{BC} = \sqrt{(8-14)^2 + (-3-(-1))^2} = \sqrt{40}$$

$$AB = AC$$

$$\therefore C(14, -1), B(8, -3) \quad (1)$$

$$m_{BC} = \frac{-3-(-1)}{8-14} = \frac{-2}{-6} = \frac{1}{3}$$

$$m_{BC} = \frac{1}{3} \therefore$$

$$BC \perp AE \quad (2)$$

BC
AE

$$m_{BC} = \frac{1}{3} \rightarrow m_{AE} = -3$$

$$A(9, 4), m_{AE} = -3$$

$$AE \equiv y - 4 = -3(x - 9) \rightarrow y - 4 = -3x + 27 \rightarrow \boxed{AE \equiv y = -3x + 31}$$

$$y = -3x + 31 \quad AE \quad :$$

$$\therefore B(8, -3), A(9, 4) \quad (1)$$

$$m_{AB} = \frac{4-(-3)}{9-8} = \frac{7}{1} = 7$$

AE BC , AB CF

$$m_{AB} = 7 \rightarrow m_{CF} = -\frac{1}{7}$$

$$C(14, -1), m_{CF} = -\frac{1}{7} \quad CF \equiv y - (-1) = -\frac{1}{7}(x - 14) \rightarrow y + 1 = -\frac{1}{7}x + 2 \rightarrow \boxed{CF \equiv y = -\frac{1}{7}x + 1}$$

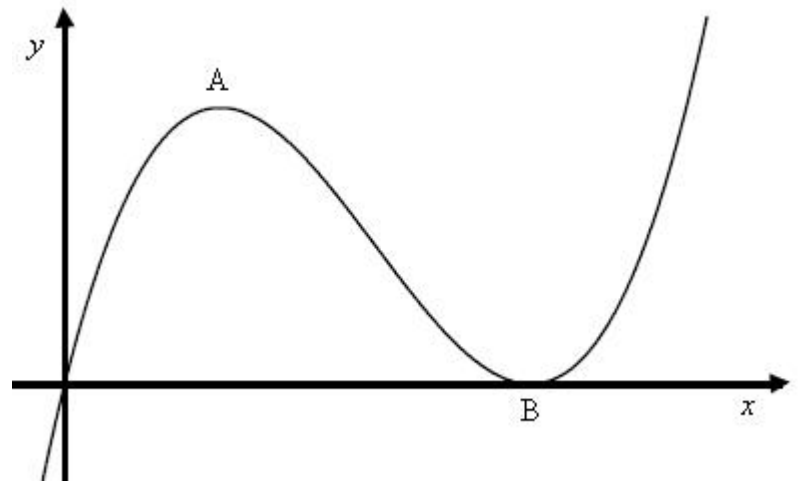
$$y = -\frac{1}{7}x + 1 \quad CF \quad :$$

$$y = -3x + 31 \quad \cdot \quad y = -\frac{1}{7}x + 1 \quad : \quad , H \quad (2)$$

$$-\frac{1}{7}x + 1 = -3x + 31 \quad \rightarrow 3x - \frac{1}{7}x = 31 - 1$$

$$2\frac{6}{7}x = 30 \quad / : (2\frac{6}{7}) \quad \rightarrow x = 10.5 \quad \rightarrow y = -3 \cdot 10.5 + 31 = -0.5 \rightarrow \boxed{H(10.5, -0.5)}$$

H(10.5, -0.5) :



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

$$f'(x) = 3x^2 - 8x + 4$$

$$0 = 3x^2 - 8x + 4$$

$$x_{1,2} = \frac{8 \pm 4}{6}$$

$$x = 2 \rightarrow \boxed{B(2, 0)} \leftarrow y = 2 \cdot (2 - 2)^2 = 0$$

$$x = \frac{2}{3} \rightarrow \boxed{A\left(\frac{2}{3}, 1\frac{5}{27}\right)} \leftarrow y = \frac{2}{3} \cdot \left(2 - \frac{2}{3}\right)^2 = 1\frac{5}{27}$$

$$B(2, 0), A\left(\frac{2}{3}, 1\frac{5}{27}\right):$$

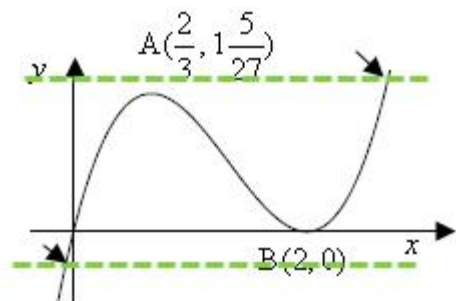
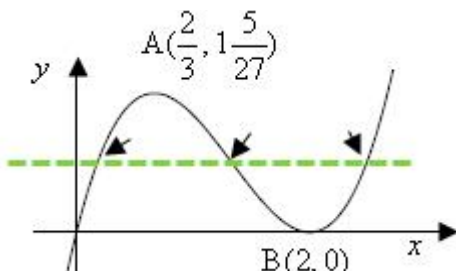
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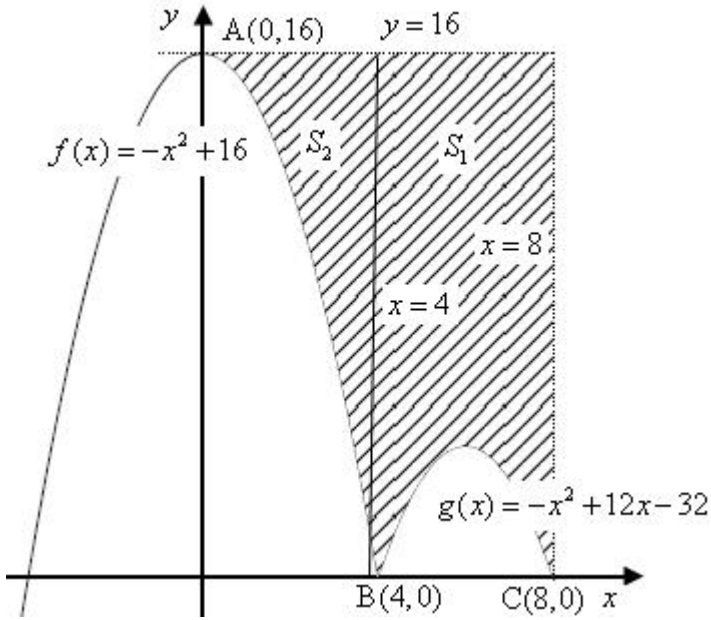
$$y = k \quad 0 < k < 1\frac{5}{27}$$

$$0 < k < 1\frac{5}{27} :$$

$$y = k \quad k > 1\frac{5}{27} \quad k < 0$$

$$k < 0 \quad k > 1\frac{5}{27} :$$





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

$x = 0$ $y =$

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

$A(0, 16) :$

$x = 4$

$B(4, 0) -$

$S_1 = \int_4^8 (16 - (-x^2 + 12x - 32)) dx$

$S_1 = \int_4^8 (16 + x^2 - 12x + 32) dx$

$S_1 = \int_4^8 (x^2 - 12x + 48) dx$

$S_1 = \left[\frac{x^3}{3} - \frac{12x^2}{2} + 48x \right]_4^8$

$S_1 = \left(\frac{8^3}{3} - \frac{12 \cdot 8^2}{2} + 48 \cdot 8 \right) - \left(\frac{4^3}{3} - \frac{12 \cdot 4^2}{2} + 48 \cdot 4 \right)$

$S_1 = 170 \frac{2}{3} - 117 \frac{1}{3} \rightarrow \boxed{S_1 = 53 \frac{1}{3}}$

$S_2 = \int_0^4 (16 - (-x^2 + 16)) dx = \int_0^4 (16 + x^2 - 16) dx =$

$\int_0^4 x^2 dx = \left[\frac{x^3}{3} \right]_0^4 = \frac{4^3}{3} - \frac{0^3}{3} \rightarrow \boxed{S_2 = 21 \frac{1}{3}}$

$S = S_1 + S_2 = 53 \frac{1}{3} + 21 \frac{1}{3} = 74 \frac{2}{3} :$

$\cdot " 74 \frac{2}{3} :$

$S_2 = \int_0^4 (16 - (-x^2 + 16)) dx = \int_0^4 (16 + x^2 - 16) dx =$

$\int_0^4 x^2 dx = \left[\frac{x^3}{3} \right]_0^4 = \frac{4^3}{3} - \frac{0^3}{3} \rightarrow \boxed{S_2 = 21 \frac{1}{3}}$

$S = S_1 + S_2 = 53 \frac{1}{3} + 21 \frac{1}{3} = 74 \frac{2}{3} :$

$\cdot " 74 \frac{2}{3} :$

S_2	S_1	
$y = 16$	$y = 16$	
$f(x) = -x^2 + 16$	$g(x) = -x^2 + 12x - 32$	
$x = 4$	$x = 8$	x
$x = 0$	$x = 4$	x

$$x \neq 0, \quad f(x) = \frac{4}{x} - 4$$

$x =$

$$0 = \frac{4}{x} - 4 \quad / \cdot x$$

$$0 = 4 - 4x$$

$$4x = 4 \quad / : 4$$

$$x = 1 \rightarrow \boxed{(1, 0)}$$

$(1, 0) :$

$$x \neq 0$$

$$f'(x) = -\frac{4}{x^2}$$

$$x \neq 0$$

$$x \neq 0$$

$$x < 0$$

$$x > 0$$

$$x > 0$$

$$x > 0$$