

• , P - .
 • 1,200

$$\cdot 1,200 \cdot \frac{100+P}{100} \quad (\quad)$$

$$\cdot 1,728 \quad (1,200 \cdot \frac{100+P}{100}) \cdot \frac{100+P}{100}$$

$$\cdot (1,200 \cdot q) \cdot q = 1728$$

$$\frac{100+P}{100} = q$$

$$1200 \cdot q^2 = 1728 \quad /:1200$$

$$q^2 = 1.44$$

$$q = 1.2 \quad \leftarrow q > 0$$

$$\frac{100+P}{100} = 1.2$$

$$100+P = 120$$

$$\boxed{P = 20}$$

• 20% :

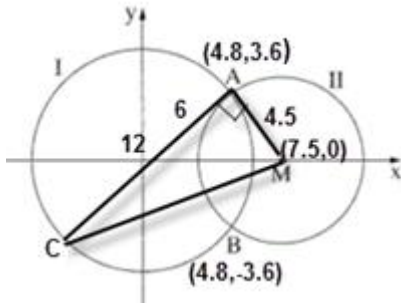
, , 1.44 .

44% -

, 42% - ,

$$1,200 \cdot \frac{100+42}{100} = 1,200 \cdot 1.42 = 1704 < 1728 :$$

• :



- 6 (0,0) ,I. $x^2 + y^2 = 36$
- 4.5 (7.5,0) ,II. $(x-7.5)^2 + y^2 = 20.25$

$$20.25 - (x-7.5)^2 = 36 - x^2$$

$$20.25 - (x^2 - 15x + 56.25) = 36 - x^2$$

$$20.25 - x^2 + 15x - 56.25 = 36 - x^2$$

$$15x = 72$$

$$x = 4.8 \rightarrow y^2 = 36 - 4.8^2 \rightarrow y = \pm 3.6$$

$$A(4.8, 3.6), B(4.8, -3.6)$$

• A(4.8, 3.6), B(4.8, -3.6) :

$$\frac{3}{4} \quad (\quad)$$

$$, m_{AM} = \frac{3.6-0}{4.8-7.5} = \frac{3.6}{-2.7} = -\frac{4}{3} \quad AM$$

$$. y - 3.6 = \frac{3}{4}(x - 4.8) \rightarrow \boxed{y = \frac{3}{4}x} : A$$

$$. y = \frac{3}{4}x \quad A \quad :$$

$$. I. \quad x^2 + y^2 = 36 \quad , \quad y = \frac{3}{4}x$$

$$. 12 \quad AC -$$

$$S_{\Delta ACM} = \frac{AC \cdot AM}{2} = \frac{12 \cdot 4.5}{2} = 27$$

$$. S_{\Delta ACM} = 27 :$$

- \bar{A} - A
- \bar{B} - B

$$P(A) = 3P(\bar{A}) \rightarrow P(\bar{A}) + 3P(\bar{A}) = 1 \rightarrow P(\bar{A}) = 0.25 \rightarrow P(A) = 0.75$$

$$P(B) = 4P(\bar{B}) \rightarrow P(\bar{B}) + 4P(\bar{B}) = 1 \rightarrow P(\bar{B}) = 0.2 \rightarrow P(B) = 0.8$$

$$P(A \cap B) = 0.65$$

	\bar{A}	A	
0.8	0.15	0.65	B
0.2	0.1	0.1	\bar{B}
1	0.25	0.75	

$$P(B \cap \bar{A}) = 0.15$$

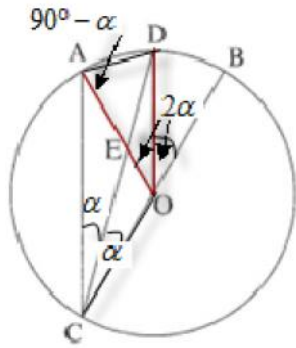
$$. 0.15$$

$$P(\bar{A}/B) = \frac{P(\bar{A} \cap B)}{P(B)} = \frac{0.15}{0.8} = \frac{3}{16}$$

$$\cdot \frac{3}{16}$$

$$\cdot 0.8^2 = 0.64$$

$$\cdot 1 - 0.64 = 0.36$$



$\angle ACD = r$.3 $\widehat{AD} = \widehat{DB}$.2 O BC .1
 $\cdot AC \parallel DO$ (2) $\angle ACO = \angle AOD$ (1) . : "
 . ACOD r (2) r $\angle DAO$ (1) .

	O	BC	4	1
		$\widehat{AD} = \widehat{DB}$	5	2
		$\angle ACD = r$	6	3
		$\angle DCB = \angle ACD = r$	7	6,5
		$\angle ACO = 2r$	8	7
		$\angle AOD = 2r$	9	7,4
		$\angle ACO = \angle AOD$	10	9,8
(1)				
		$\angle DOB = 2r$	11	9,5
		$\angle ACO = \angle DOB$	12	11,8
		$AC \parallel DO$	13	12
(2)				
		$AO = DO$	14	4
, $\triangle AOD$,		$\angle DAO = 90^\circ - r$	15	14,9
180°				
(1)				
		$\angle DOB = 4r$	16	11,9
, 180° -				
, ACOD	AD \parallel CO	$90^\circ - r + 4r = 180^\circ$	17	16,15
		$r = 30^\circ$	18	17
(2)				

. () $AB = AC = 6$.

. " 6 () $ACFG$

. " 4 () $BCDE$

. $CG = \sqrt{6^2 + 6^2} = \sqrt{72} = "$ 8.485 : ΔACG

. $EC = \sqrt{4^2 + 4^2} = \sqrt{32} = "$ 5.657 : ΔEBC

. " 5.657 $BCDE$, " 8.485 $ACFG$:

. () , ΔABC - , BC AE .

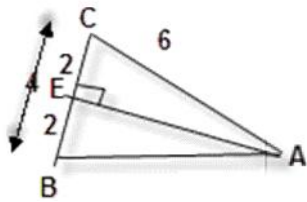
ΔAEC

$$\cos \sphericalangle ACE = \frac{CE}{AC}$$

$$\cos \sphericalangle ACE = \frac{2}{6}$$

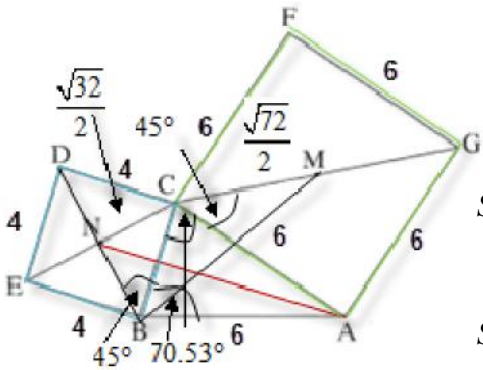
$$\sphericalangle ACE = 70.53^\circ$$

. 70.53° ΔABC - :



$\sphericalangle ACM = \sphericalangle CBN = 45^\circ$,

$\sphericalangle BCM = \sphericalangle ABN = 70.53^\circ + 45^\circ = 115.53^\circ$:



$$S_{\Delta ABN} = \frac{AB \cdot BN \cdot \sin \sphericalangle ABN}{2}$$

$$S_{\Delta BCM} = \frac{BC \cdot CM \cdot \sin \sphericalangle BCM}{2}$$

$$S_{\Delta ABN} = \frac{6 \cdot \frac{\sqrt{32}}{2} \cdot \sin 115.53^\circ}{2}$$

$$S_{\Delta BCM} = \frac{4 \cdot \frac{\sqrt{72}}{2} \cdot \sin 115.53^\circ}{2}$$

$$S_{\Delta ABN} = 7.657 \text{ cm}^2$$

$$S_{\Delta BCM} = 7.657 \text{ cm}^2$$

. AN

$NC = 0.5 \cdot 5.657 = "$ 2.8285

ΔANC

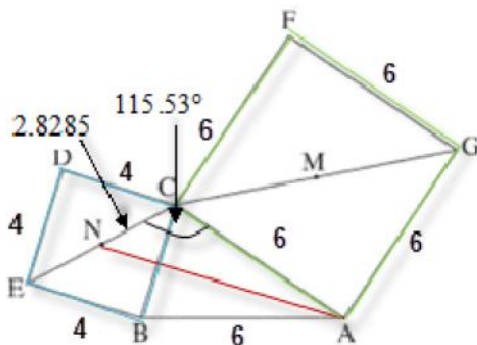
$$(AN)^2 = (AC)^2 + (NC)^2 - 2 \cdot AN \cdot NC \cdot \cos \sphericalangle NCA$$

$$(AN)^2 = 6^2 + 2.8285^2 - 2 \cdot 6 \cdot 2.8285 \cdot \cos 115.53^\circ$$

$$(AN)^2 = 58.629$$

$$AN = 7.657 \text{ cm}$$

. $AN = "$ 7.657 :



$$m) f(x) = \frac{m-4x}{(x-1)^2}$$

$$x \neq 1 :$$

$$x = 3, f'(3) = 0$$

$$f'(x) = \frac{-4(x-1)^2 - (m-4x) \cdot 2 \cdot (x-1)}{(x-1)^4}$$

$$0 = -4(3-1)^2 - (m-4 \cdot 3) \cdot 2 \cdot (3-1)$$

$$0 = -16 - 4 \cdot (m-12)$$

$$16 = -4(m-12)$$

$$-4 = m-12$$

$$\boxed{m=8}$$

$$m = 8 :$$

$$f(x) = \frac{8-4x}{(x-1)^2} \quad m=8$$

$$(1) \quad x=1 :$$

$$(2) \quad (1) \quad y=0 :$$

$$y=0, x=1 :$$

$$f(0) = \frac{8-4 \cdot 0}{(0-1)^2} = 8 \rightarrow \boxed{(0,8)} \quad x=0 : y \quad (2)$$

$$0 = 8 - 4x \rightarrow x = 2 \rightarrow \boxed{(2,0)} \quad y=0 : x$$

$$(2,0), (0,8) :$$

(3)

$$f'(x) = \frac{-4(x-1)^2 - (8-4x) \cdot 2 \cdot (x-1)}{(x-1)^4}$$

$$f'(x) = \frac{2(x-1)[-2(x-1) - (8-4x)]}{(x-1)^4}$$

$$f'(x) = \frac{2(x-1)(-2x+2-8+4x)}{(x-1)^4}$$

$$f'(x) = \frac{2(x-1)(2x-6)}{(x-1)^4}$$

$$0 = 2x-6 \rightarrow x=3 \rightarrow \boxed{(3,-1)}$$

$x=1$

(

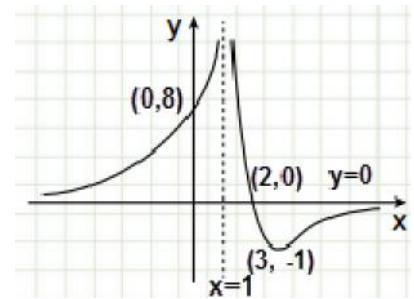


	1		3		x
+		-	0	+	$f'(x)$
↖		↘	Min	↖	

$(3, -1)$:

(4)

$1 < x < 3$: , $x < 1$ $x > 3$: :



$x < 1$ $1 < x < 2$ $f(x) > 0$.

$x < 1$ $x > 3$, $f(x)$, $f'(x) > 0$

$x < 1$

$x < 1$:

$$f'(x) = 3x^2 - 12x + 9$$

 $f(x)$
 $f(x)$
 x

(1)

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

$$x_1 = 1, \quad x_2 = 3$$



	1		3		x
+		-	0	+	$f'(x)$
↖	Max	↘	Min	↖	

$$x = 1, \quad x = 3 :$$

(1, 4)

$$f(x) = y = 4 \quad (2)$$

$$f(x) = \int (3x^2 - 12x + 9) dx$$

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

$$4 = 1^3 - 6 \cdot 1^2 + 9 \cdot 1 + c$$

$$c = 0$$

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

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

$$f(0) = 0^3 - 6 \cdot 0^2 + 9 \cdot 0 \rightarrow (0, 0) \quad - \quad x = 0 : y \quad (1)$$

$$- \quad y = 0 : x$$

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

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

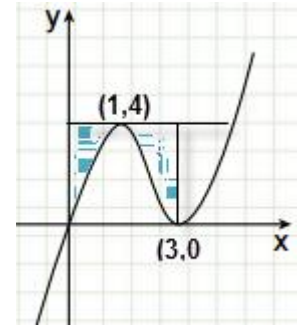
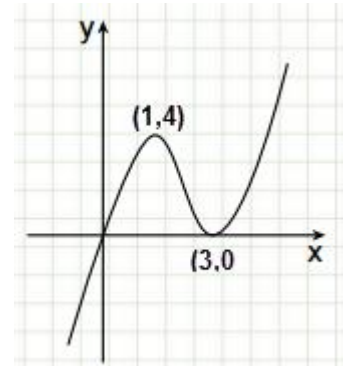
$$0 = x(x-3)^2$$

$$(0, 0), \quad (3, 0)$$

$$(3, 0), \quad (0, 0) :$$

"

(2)



$$0 \leq x \leq 3$$

,

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

,

$$S = \int_0^3 (4 - (x^3 - 6x^2 + 9x)) dx$$

$$S = \int_0^3 (4 - x^3 + 6x^2 - 9x) dx$$

$$S = \left[4x - \frac{x^4}{4} + \frac{6x^3}{3} - \frac{9x^2}{2} \right]_0^3$$

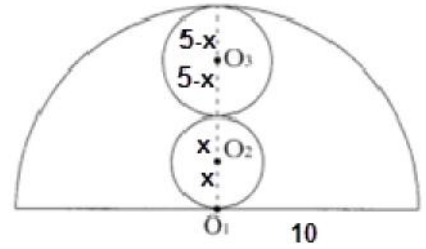
$$S = \left(4 \cdot 3 - \frac{3^4}{4} + 2 \cdot 3^3 - \frac{9 \cdot 3^2}{2} \right) - \left(4 \cdot 0 - \frac{0^4}{4} + 2 \cdot 0^3 - \frac{9 \cdot 0^2}{2} \right)$$

$$S = (5.25) - (0)$$

$$\boxed{S = 5.25}$$

∴ " 5.25 : "

$.2x$ O_2 $-x$.
 $.10-2x$ O_3 $,10$
 $.5-x$ O_3



מינימום **סכום שטחי שני המצולעים** $O_3 - O_2$.

$$S = f x^2 + f (5-x)^2$$

$$S = f (x^2 + (5-x)^2)$$

$$S = f (x^2 + 25 - 10x + x^2)$$

$$S = f (2x^2 + 25 - 10x)$$

$$S' = f (4x - 10)$$

$$0 = 4x - 10$$

$$x = 2.5$$

$$S' = 4f > 0 \rightarrow x = 2.5, \text{Min}$$

$$r_{O_2} = 2.5 \rightarrow r_{O_3} = 5 - 2.5 = 2.5$$

$O_3 - O_2$, " 2.5 :

$$, P = 2f \cdot 2.5 = " 5f \quad x = 2.5 .$$

$$. " 10f$$

.. , " 10f :