

• , , x% .  
 • 200

$$\left(\frac{100-x}{100}\right) \cdot 200$$

$$\left(\frac{100-x}{100}\right) \cdot \left(\frac{100-x}{100}\right) \cdot 200$$

$$, 144.5 , , q = \frac{100-x}{100}$$

$$200 \cdot q^2 = 144.5$$

$$q^2 = \frac{144.5}{200}$$

$$q^2 = 0.7225$$

$$q = 0.85 \leftarrow q > 0$$

$$. 100\% - q > 0$$

$$0.85 = \frac{100-x}{100}$$

$$85 = 100 - x$$

$$\boxed{x = 15}$$

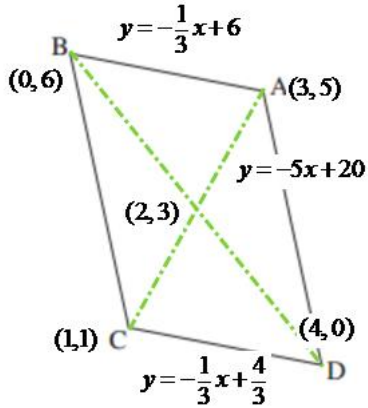
.15 :

• 200 144.5 .

$$200 - 144.5 = 55.5$$

$$\frac{55.5}{200} \cdot 100 = \boxed{27.75}$$

.27.75 :



. A

$$\begin{cases} y = -\frac{1}{3}x + 6 \\ y = -5x + 20 \end{cases}$$

$$-\frac{1}{3}x + 6 = -5x + 20$$

$$4\frac{2}{3}x = 14$$

$$x = 3 \rightarrow y = -5 \cdot 3 + 20 = 5 \rightarrow A(3,5)$$

. C

$$(2,3) \quad A(3,5)$$

$$2 = \frac{3+x_C}{2} \quad 3 = \frac{5+y_C}{2}$$

$$4 = 3 + x_C \quad 6 = 5 + y_C$$

$$x_C = 1 \quad y_C = 1$$

**C(1,1)**

.C(1,1) :

AB  $-\frac{1}{3}$  CD

$$m_{CD} = -\frac{1}{3}, \quad C(1,1)$$

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

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

. D

$$\begin{cases} y = -\frac{1}{3}x + \frac{4}{3} \\ y = -5x + 20 \end{cases}$$

$$-\frac{1}{3}x + \frac{4}{3} = -5x + 20$$

$$4\frac{2}{3}x = \frac{56}{3}$$

$$x = 4 \rightarrow y = -5 \cdot 4 + 20 = 0 \rightarrow \mathbf{D(4,0)}$$



$1 - p$  ,

$p =$  .

$p = 1 - p + 0.2$

$2p = 1.2$

$p = 0.6$

0.6

:

$k = 2$  ,

$p = 0.6$  ,  $n = 4$  ,

(1) .

$$P_4(2) = \binom{4}{2} (0.6)^2 (1-0.6)^{4-2}$$

$$P_4(2) = \frac{4!}{2!(4-2)!} \cdot 0.6^2 \cdot 0.4^2$$

$$P_4(2) = 6 \cdot 0.6^2 \cdot 0.4^2$$

$$P_4(2) = 0.3456$$

0.3456

:

6  $\binom{4}{2}$  : (2)

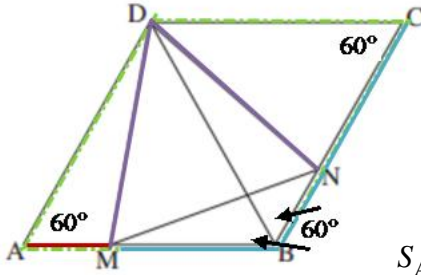
$\frac{1}{6}$

$\frac{1}{6}$

:

$1 - 0.4^4$  :

$1 - 0.6^4$  :



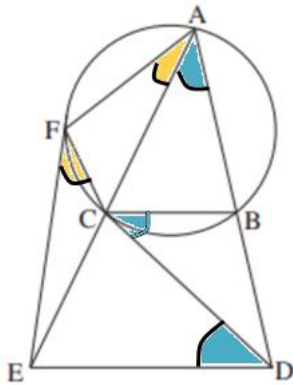
$AM = BN$  .3  $\sphericalangle A = \sphericalangle C = 60^\circ$  .2  $ABCD$  .1

$S_{DBMN} = S$  .4 :

$S_{ABCD}$  .  $\triangle ADM \cong \triangle BDN$  .  $\triangle MDB \cong \triangle NDC$  . : "

	ABCD	4	1
	AB = BC	5	4
	AM = BN	6	3
	( ) MB = CN	7	6,5
	$\sphericalangle A = \sphericalangle C = 60^\circ$	8	2
	DC = CB	9	4
$60^\circ$	DC = CB = DB	10	9,8
	( ) DC = DB	11	10
$180^\circ -$	$\sphericalangle ABC = 120^\circ$	12	8,4
	$\sphericalangle ABD = \sphericalangle CBD = 60^\circ$	13	12,4
	( ) $\sphericalangle ABD = \sphericalangle C$	14	13,8
	$\triangle MDB \cong \triangle NDC$	15	11,14,7
...			
	( ) DB = AD	16	9,1
	( ) $\sphericalangle CBD = \sphericalangle A$	17	13,8
	$\triangle ADM \cong \triangle BDN$	18	16,17,6
...			
	$S_{DBMN} = S$	19	4
	$S_{\triangle ADM} = S_{\triangle BDN} = S_1$	20	15
	$S_{\triangle MDB} = S_{\triangle NDC} = S_2$	21	18
	$S = S_1 + S_2$	22	21,20,19
	$S_{ABCD} = 2S_1 + 2S_2$	23	21,20
	$S_{ABCD} = 2S$	24	23,19

• • •			



C - DC .2 BC || DE .1

F - EF .3

AC · CE = DE<sup>2</sup> (2) ∠EAD = ∠CDE (1) . : "

EF = DE . ΔECF ~ ΔEFA .

	BC    DE	4	1
	∠CDE = ∠BCD	5	4
	C - DC	6	2
	∠BCD = ∠EAD	7	6
	( ) ∠EAD = ∠CDE	8	7,5
(1) . . .			
	( ) ∠CED = ∠DEA	9	
	ΔECD ~ ΔEDA	10	9,8
	$\frac{EC}{ED} = \frac{ED}{EA}$	12	11,10
	AC · CE = DE <sup>2</sup>	13	12
(2) . . .			
	F - EF	14	3
	( ) ∠CFE = ∠FAE	15	14
	( ) ∠FEC = ∠AEF	16	
	ΔECF ~ ΔEFA	17	16,15
. . . .			
	$\frac{EC}{EF} = \frac{EF}{EA}$	18	17
	AC · CE = EF <sup>2</sup>	19	18
	EF <sup>2</sup> = DE <sup>2</sup>	20	19,18
( )	EF = DE	21	20

. . .			



$\angle BOA = 90^\circ$  - OAB .  
 .( )  $\angle BAC = 90^\circ$  , C AC  
 .( , OA , ) AC || OD  
 :  
 ) C OC , CP - CA .

( ,  $\angle PCA = 180^\circ - 2r$  (  $\triangle ABC - 180^\circ$  )  $\angle ACO = 90^\circ - r$   
 .(  $180^\circ -$  )  $\angle D = 2r$   
 ( )  $\angle OPD = 90^\circ$

$\triangle ACO$

$$\tan r = \frac{AC}{AO}$$

$$\boxed{AC = R \tan r}$$

$\triangle OPD$

$$\sin 2r = \frac{OP}{OD}$$

$$\boxed{OD = \frac{R}{\sin 2r}}$$

P - B D , OB D  
 . , ACDO

$$S_{ACDO} = \frac{1}{2} \cdot (OD + AC) \cdot OA = \frac{1}{2} R \left( \frac{R}{\sin 2r} + R \tan r \right) = \boxed{0.5R^2 \left( \frac{1}{\sin 2r} + \tan r \right)}$$

$$\cdot 0.5R^2 \left( \frac{1}{\sin 2r} + \tan r \right) \quad ACDO \quad :$$

$$\cdot \frac{1}{2} R^2 \quad OPD$$

, OP = R ,

$$\cdot \left( \frac{R^2}{2} = \frac{R \cdot DP}{2} \rightarrow DP = R \right) DP = R$$

.  $45^\circ$  - , - -

$$\boxed{r = 22.5^\circ} - 2r = 45^\circ , \angle D = 45^\circ \quad \angle D = 2r$$

.  $r = 22.5^\circ$  :

$$f(x) = \frac{9}{(x+1)^2} - 1$$

$x \neq -1$  :

( , )

$y = -1$  : ,  $f(-100) = -0.999 \rightarrow -1$ ,  $f(100) = -0.999 \rightarrow -1$

$x = -1$  : ,  $f(-0.99) = 89,999 \rightarrow +\infty$ ,  $f(-1.01) = 89,999 \rightarrow +\infty$

(0,8)

$x = 0$   $y =$

:  $y = 0$   $x =$

$$0 = \frac{9}{(x+1)^2} - 1$$

$$1 = \frac{9}{(x+1)^2}$$

$$(x+1)^2 = 9$$

$$x+1 = 3 \rightarrow x = 2 \rightarrow (2,0)$$

$$x+1 = -3 \rightarrow x = -4 \rightarrow (-4,0)$$

(-4,0) , (2,0) , (0,8) :

$y =$

$x = -1$  ,  $x =$

$y = -1$  :

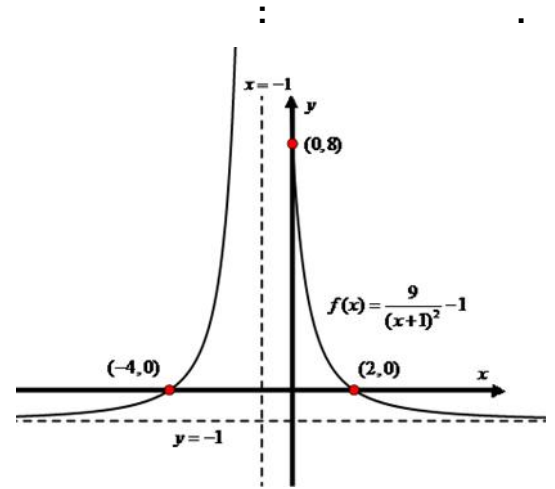
$$f'(x) = \frac{-9 \cdot 2(x+1)}{(x+1)^4}$$

$$f'(x) = \frac{-18(x+1)}{(x+1)^4}$$

$x < -1$  ,

$x > -1$  ,  $x \neq -1$

$x < -1$  ,  $x > -1$  :



•  $f'(x)$

II

•  $f'(x)$

$x = -1$  (1)

$y = 0$  (2)

•  $x < -1$

II ,

$f(x)$

(3)

•  $x > -1$

II ,

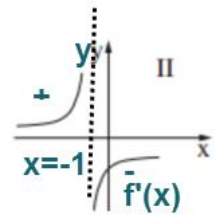
$f(x)$

(4)

•  $x =$

II  $x$

(5)



• II :

, I  $f(x) = \frac{2}{\sqrt{2x-3}}$  (1)

. II  $g(x) = -\frac{2}{\sqrt{2x-3}}$

.  $x > 1.5$   $2x-3 > 0$ ,

.  $x > 1.5$  :

.  $x = 1.5$  ,  $x = 1.5$  , (2)

.  $x = 1.5$  :

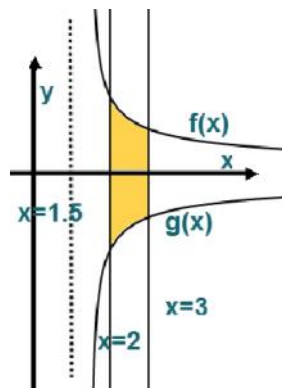
(. II  $g(x) = -\frac{2}{\sqrt{2x-3}}$  , I  $f(x) = \frac{2}{\sqrt{2x-3}}$  :

.  $x_A = x_B$   $y_A = 2 = -y_B$  ,  $g(x) = -f(x)$  ,

$x_A = x_B = 2$  -  $2x-3=1$  .  $\sqrt{2x-3}=1$   $2 = \frac{2}{\sqrt{2x-3}}$

( )  $x = 3$  -  $x = 2$  ,

.( )  $x$  -



$S = 2 \cdot \int_2^3 (\frac{2}{\sqrt{2x-3}} - 0) dx =$

$S = 2 \cdot \frac{2 \cdot 2\sqrt{2x-3}}{2} \Big|_2^3 = 4\sqrt{2x-3} \Big|_2^3$

$S = (4\sqrt{2 \cdot 3 - 3}) - (4\sqrt{2 \cdot 2 - 3})$

$S = 4\sqrt{3} - 4$

.  $4\sqrt{3} - 4$  :

