

.B A , () t - .
 t-1
 (t) (v) (s) - s = vt
 :

s - "	v - "	t -		
$30(t-1)$	$\frac{100+50}{100} \cdot 20 = 1.5 \cdot 20 = 30$	$t-1$		
$20t$	20	t		

. , $30(t-1) = 20t$:

:

$$30(t-1) = 20t$$

$$30t - 30 = 20t$$

$$10t = 30 \quad /:10$$

$$\boxed{t = 3}$$

. 2 :

. , $30 \cdot 2 =$ " 60 , , .

.A

. " 40 , " 20 , B ,

. $60 + 40 =$ " 100

. " 100 B - A :

. $100 : 2 =$ " 50

. $\frac{50}{30} = 1\frac{2}{3}$ - , " 30

. $\frac{50}{20} = 2.5$ -

. 50 , $2.5 - 1\frac{2}{3} = \frac{5}{6}$,

. - , 50 :

"

-1 () , 1 , C .
 $R = \sqrt{32}$ M(5, 3) $(x-5)^2 + (y-3)^2 = 32$
 $m = -1$, M(5, 3) , CM

$$y - 3 = -1(x - 5)$$

$$y - 3 = -x + 5$$

$$\boxed{y = -x + 8}$$

$$. y = -x + 8 \quad :$$

. A - C , $y = -x + 8$.

$$(x - 5)^2 + (-x + 8 - 3)^2 = 32$$

$$(x - 5)^2 + (-x + 5)^2 = 32$$

$$(x - 5)^2 + (x - 5)^2 = 32$$

$$2(x - 5)^2 = 32$$

$$(x - 5)^2 = 16$$

$$x - 5 = 4$$

$$x - 5 = -4$$

$$x = 9$$

$$x = 1$$

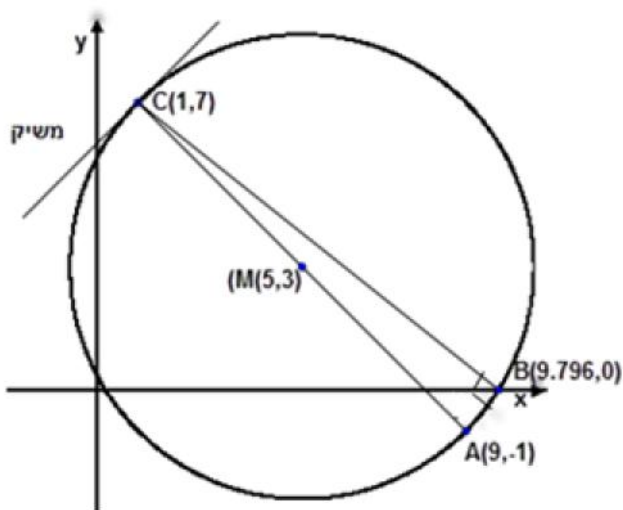
$$y = -9 + 8 = -1$$

$$y = -1 + 8 = 7$$

$$A(9, -1)$$

$$\boxed{C(1, 7)}$$

. C(1, 7) :



A(9,-1)

CM

(1)

(-

) $\angle ABC = 90^\circ$

,

AB -

ABC

∴

$$S_{\Delta ABC} = \frac{BC \cdot BA}{2} \quad (2)$$

B $x_B > 5$ - $y_B = 0$

, B

$$(x-5)^2 + (0-3)^2 = 32$$

$$(x-5)^2 = 23$$

$$x-5 = \sqrt{23} \rightarrow x = 7.796 \rightarrow \boxed{B(9.796, 0)}$$

$$x-5 = -\sqrt{23} \rightarrow x = 0.1204 < 5 \rightarrow \text{not o.k.}$$

$$AB = \sqrt{(9.796-9)^2 + (0-(-1))^2} = 1.278$$

$$AB = \sqrt{(9.796-1)^2 + (0-7)^2} = 11.24$$

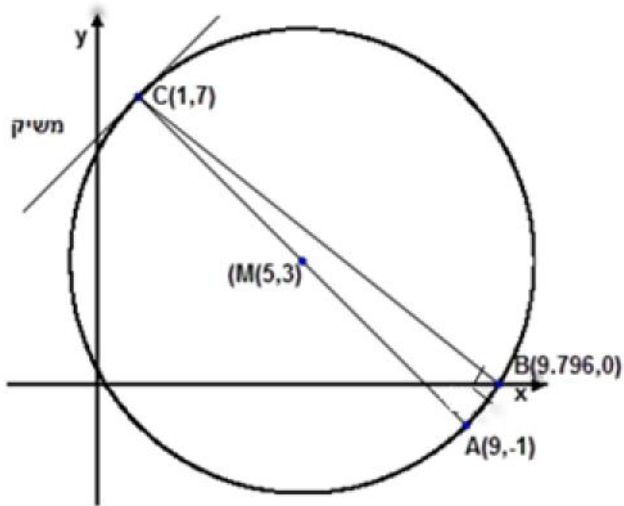
$$S_{\Delta ABC} = \frac{BC \cdot BA}{2}$$

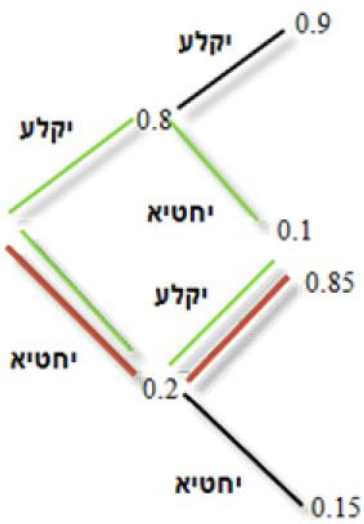
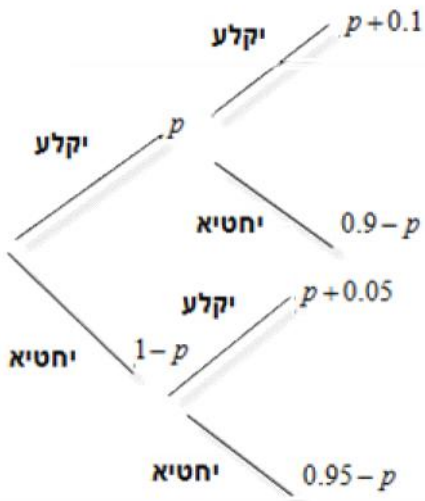
$$S_{\Delta ABM} = \frac{11.24 \cdot 1.278}{2} = 7.18$$

∴ 7.18

ABC

∴





$p =$

:

0.03 ()

$$0.03 = (1 - p) \cdot (0.95 - p)$$

$$0.03 = 0.95 - p - 0.95p + p^2$$

$$0 = p^2 - 1.95p + 0.92$$

$$\cancel{p = 1.15} \leftarrow 0 \leq p \leq 1$$

$$p = 0.8$$

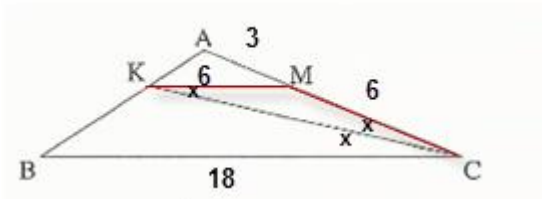
$p = 0.8$:

$$p(1 \text{ shot in}) = 0.8 \cdot 0.1 + 0.2 \cdot 0.85 = 0.25$$

0.25 :

$$p(2nd \text{ in} / 1 \text{ shot in}) = \frac{P(2nd \text{ in} \cap 1 \text{ shot in})}{P(1 \text{ shot in})} = \frac{0.2 \cdot 0.85}{0.25} = 0.68$$

0.68 :

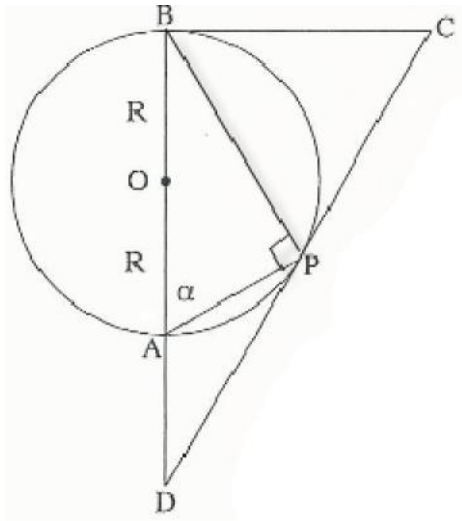


.KM || BC .2 . $\sphericalangle MCK = \sphericalangle BCK$.1
 .KM = " 6 .4 .BC = " 18 .3
 . $S_{\Delta AKM} = " 9$.5 :
 : . $S_{BKMC} \cdot AC \cdot \frac{AK}{AB} \cdot "$

,AM = " 3 $S_{\Delta AKM} = " 9$

.AM - " 3 KM -

	KM BC	6	2
	$\sphericalangle MKC = \sphericalangle BCK$	7	6
	$\sphericalangle MCK = \sphericalangle BCK$	8	1
	$\sphericalangle MCK = \sphericalangle MCK$	9	8,7
ΔKMC	KM = MC	10	9
	KM = " 6	11	4
	BC = " 18	12	3
1	$\frac{AK}{AB} = \frac{AM}{AC} = \frac{KM}{BC}$	13	6
	$\frac{AK}{AB} = \frac{1}{3}$	14	13,12,11
. . .			
	MC = " 6	15	11,10
	$\frac{AM}{MC} = \frac{1}{2}$	16	14,13
	AM = " 3	17	16,15
. . .			
	$\Delta AKM \sim \Delta ABC$	19	13
	$\frac{AK}{AB} = \frac{AM}{AC} = \frac{KM}{BC} = \frac{1}{3}$	20	19,14,13
	$\frac{S_{\Delta AKM}}{S_{\Delta ABC}} = \frac{1}{9}$	21	20
	$\frac{S_{\Delta AKM}}{S_{BKMC}} = \frac{1}{8}$	22	21
	$S_{\Delta AKM} = " 9$	23	5
	$S_{\Delta AKM} = " 72$	24	23,22
. . .			



.(

) $\sphericalangle BPA = 90^\circ$.() $\sphericalangle BAP = r$.

$\triangle ABP$

$$\cos r = \frac{AP}{AB}$$

$$\boxed{AP = 2R \cos r}$$

$\triangle ABP$

$$S_{\triangle ABP} = \frac{AB \cdot AP \cdot \sin r}{2}$$

$$S_{\triangle ABP} = \frac{2R \cdot 2R \cos r \cdot \sin r}{2}$$

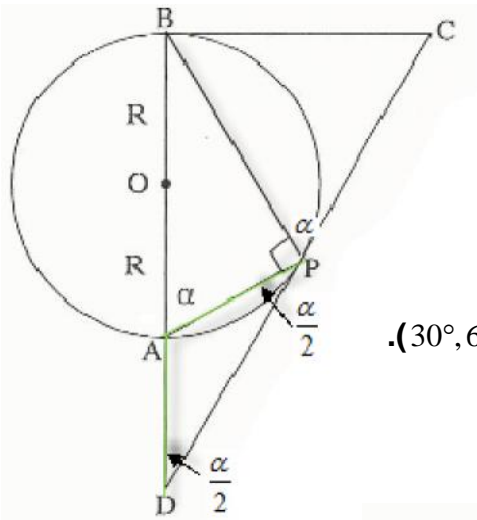
$$\boxed{S_{\triangle ABP} = R^2 \sin 2r}$$

. $S_{\triangle ABP} = R^2 \sin 2r$:

. $\sphericalangle ADP = \sphericalangle APD = \frac{r}{2}$ () $AD = AP$.

.(

, ")



.($30^\circ, 60^\circ, 90^\circ$

.() $\sphericalangle CPB = \sphericalangle BAP = r$

.($180^\circ -$) $r + 90^\circ + \frac{r}{2} = 180^\circ$

.() $r = 60^\circ$

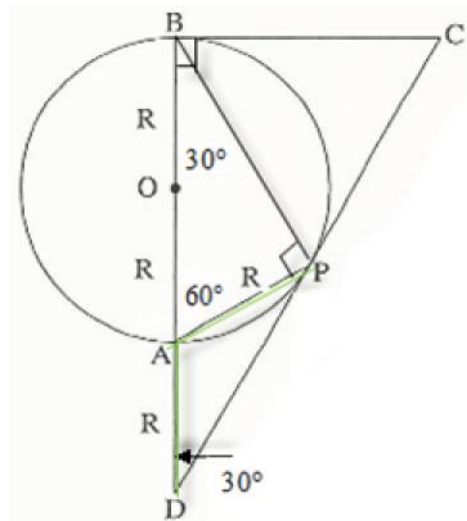
$r = 60^\circ$:

.(180° $\triangle ABP$) $\sphericalangle ABP = 30^\circ$.

) $AP = R$

.() $BD = 3R$ () $AD = R$

.() $\sphericalangle DBC = 90^\circ$



$\triangle DBC$

$$\tan 30^\circ = \frac{BC}{BD}$$

$$3R \tan 30^\circ = BC$$

$$\boxed{BC = R\sqrt{3}}$$

$$S_{\triangle DBC} = \frac{BD \cdot BC}{2} = \frac{3R \cdot R\sqrt{3}}{2}$$

$$\boxed{S_{\triangle DBC} = 1.5R^2\sqrt{3}}$$

. $S_{\triangle DBC} = 1.5R^2\sqrt{3}$:

$$f(x) = \frac{3x+1}{x-x^2} \tag{1}$$

$$x-x^2 \neq 0$$

$$x(x-1) \neq 0$$

$$x \neq 0, x \neq 1 :$$

$$\dots \tag{2}$$

$$y=0 : \dots, f(-100) = 0.03 \rightarrow 0, f(100) = 0.03 \rightarrow 0$$

$$x=0 : \dots, f(-0.001) = -996 \rightarrow -\infty, f(0.001) = 1004 \rightarrow +\infty$$

$$x=1 : \dots, f(0.999) = 4001 \rightarrow +\infty, f(1.001) = -399 \rightarrow -\infty$$

:

$$\dots \tag{1} \tag{2} \dots, \pm\infty - x, 0 - \frac{3x+1}{x-x^2}$$

$$x=0, x=1, \dots, x=0, x=1$$

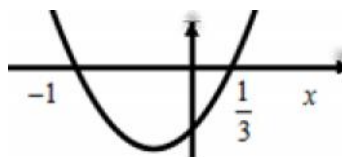
$$y - x=0, x=1, x - y=0 :$$

$$\tag{3}$$

$$f'(x) = \frac{3(x-x^2) - (3x+1)(1-2x)}{(x-x^2)^2}$$

$$f'(x) = \frac{3x - 3x^2 - 3x + 6x^2 - 1 + 2x}{(x-x^2)^2}$$

$$f'(x) = \frac{3x^2 + 2x - 1}{(x^2 - x)^2}$$



$$3x^2 + 2x - 1 = 0$$

$$x = \frac{1}{3}, x = -1$$

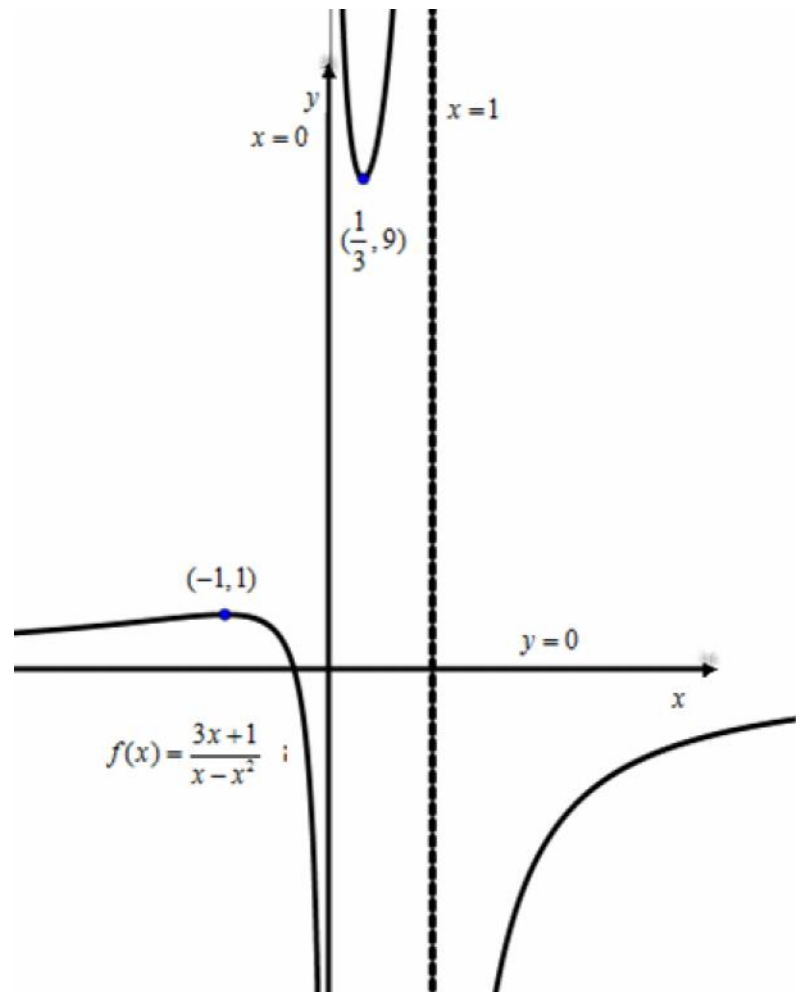
$$\dots \tag{}$$

$$x = -1$$

$$x = \frac{1}{3}$$

$$\left(\frac{1}{3}, 9\right), (-1, 1) :$$

$$x < -1, \frac{1}{3} < x < 1, x > 1, -1 < x < 0, 0 < x < \frac{1}{3} \tag{4}$$



, $f(x) = k$

$\frac{3x+1}{x-x^2} = k$

• $y_{max} < k < y_{min}$

. $1 < k < 9$:

$(x > 2) \quad y = \frac{1}{\sqrt{2x-4}}$

$A(4, \frac{1}{2})$

$$y' = \frac{0 - \frac{2}{2\sqrt{2x-4}}}{2x-4}$$

$$y' = \frac{-1}{(2x-4)\sqrt{2x-4}}$$

$$m_{x=4} = \frac{-1}{(2 \cdot 4 - 4)\sqrt{2 \cdot 4 - 4}} = -\frac{1}{8}$$

$-\frac{1}{8}, A(4, \frac{1}{2})$

$$y - \frac{1}{2} = -\frac{1}{8}(x - 4)$$

$$y - \frac{1}{2} = -\frac{1}{8}x + \frac{1}{2}$$

$$y = -\frac{1}{8}x + 1$$

$y = -\frac{1}{8}x + 1$

$4 \leq x \leq 10$

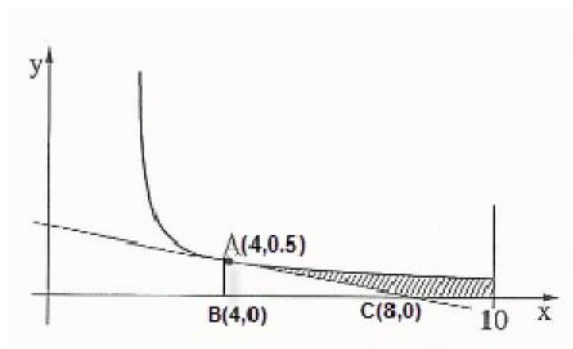
ΔABC

$C(8, 0)$

$0 = -\frac{1}{8}x + 1 \quad y_C = 0$

$$S_{\Delta ABC} = \frac{(8-4) \cdot (\frac{1}{2} - 0)}{2} = 1$$

$4 \leq x \leq 10$



$$S = \int_4^{10} (\frac{1}{\sqrt{2x-4}} - 0) dx$$

$$S = \frac{2\sqrt{2x-4}}{2} \Big|_4^{10}$$

$$S = (\sqrt{2 \cdot 10 - 4}) - (\sqrt{2 \cdot 4 - 4})$$

$$S = (4) - (2)$$

$$S = 2$$

$2 - 1 = 1$

" 1

• $g(x) = -3x + 9$

,D $x -$ $x -$.

• $D(x, -3x + 9)$

• $x_D - x_A = x - 0 = x$, $x -$

,ABCD AD

• $x_C = x_D = x$, $y -$

,ABCD DC

, $C(x, x^2)$ $f(x) = x^2$

, C

• $y_D - y_C = -3x + 9 - x^2$, $y -$

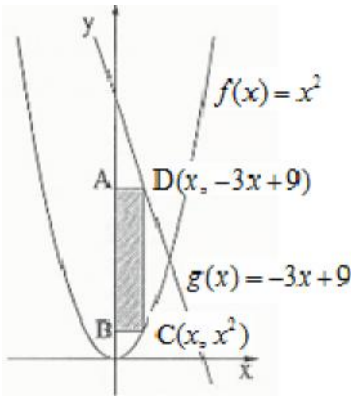
,ABCD DC

• $AD = x$, $DC = -3x + 9 - x^2$:

.ABCD

פונקציה

(1) .



$S(x) = x(-3x + 9 - x^2)$

$S(x) = -3x^2 + 9x - x^3$

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

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

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

$x = 1$ ~~$x = -3$~~ $0 < x < 3$

$S''(x) = -6 - 6x$

$S''(1) = -6 - 6 \cdot 1 < 0 \rightarrow \text{Max}$

. ABCD

, $x = 1$:

$S(1) = -3 \cdot 1^2 + 9 \cdot 1 - 1^3 = 5$ (2)

.5 ABCD

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