

.( " )  $x+10$  ,( " )  $x -$  .  
 ,(60 - 24 - ) 36 ,  
 (  $\frac{36}{60} = 0.6$  ) 36 - " 12  
 (t) (v) (s) -  $s = vt$

" s	" v	t	
0.6x	x	0.6	
0.6(x+10)	x+10	0.6	

$0.6x + 0.6(x+10) = 12$  :

$0.6x + 0.6(x+10) = 12$

$0.6x + 0.6x + 6 = 12$

$1.2x = 6 \quad / :10$

$x = 5$

. " 15

" 5

. " 15

:

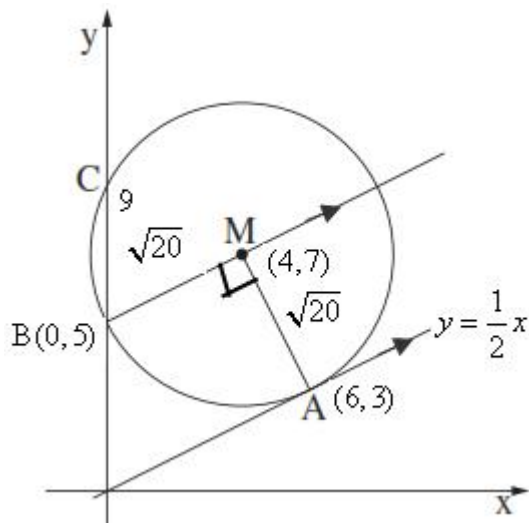
. ,24+36= 60 .

. " 15 A

, " 15

.A " 15

:



, -2 AM , (1) .

(6,3) . (a,7) y = 7 ,

$$-2 = \frac{3-7}{6-a}$$

$$-12 + 2a = -4$$

$$a = 4$$

.(4,7) :  
 .(AM) (2)

$$R = \sqrt{(4-6)^2 + (7-3)^2} = \sqrt{20}$$

$$(x-4)^2 + (y-7)^2 = 20$$

x = 0 (1) .

$$(0-4)^2 + (y-7)^2 = 20$$

$$(y-7)^2 = 4$$

$$y-7 = 2 \quad y-7 = -2$$

$$y = 5 \quad y = 9$$

B(0,5)

$$m_{BM} = \frac{5-7}{0-4} = \frac{-2}{-4} = \frac{1}{2}$$

. A - BM

. :

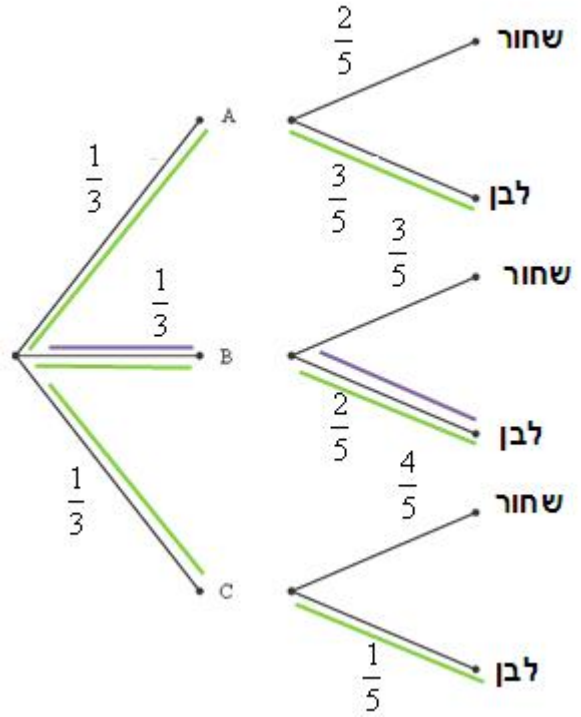
$\angle BMA = 90^\circ$  - ,

AM - A - BM (2)

$$. S_{\Delta BMA} = \frac{BM \cdot MA}{2} = \frac{\sqrt{20} \cdot \sqrt{20}}{2} = 10$$

$$S_{\Delta BMA} = 10 :$$

(1).



(2)

B

$$p(\text{white ball}) = \frac{1}{3} \cdot \frac{3}{5} + \frac{1}{3} \cdot \frac{2}{5} + \frac{1}{3} \cdot \frac{1}{5} = 0.4$$

. 0.4

:

,B

(2)

$$p(\text{box B} / \text{white ball}) = \frac{P(\text{box B} \cap \text{white ball})}{P(\text{white ball})} = \frac{\frac{1}{3} \cdot \frac{2}{5}}{0.4} = \frac{1}{3}$$

·  $\frac{1}{3}$

:

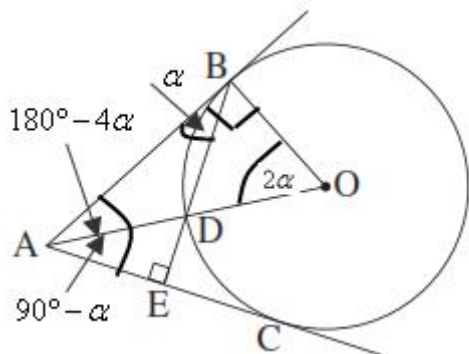
C

$$p = \frac{1}{5} \cdot 1 + \frac{4}{5} \cdot \frac{1}{4} = 0.4$$

. 0.4

:

"



.B - AB .1  
:  
.C - AC .2  
.BE ⊥ AC .3  
:"  
∠BOD = 2 · ∠ABD .

BD = AD (2) ∠BOD = 2 · ∠DBE (1) .

	B - AB	4	1
+	$\angle ABD = \frac{\widehat{BD}}{2} = r$	5	4
	$\angle BOD = \widehat{BD} = 2r$	6	
	$\angle BOD = 2 \cdot \angle ABD$	7	6,5
. . . .			
	$\angle OBA = 90^\circ$	8	4
$\triangle BAO - 180^\circ$	$\angle BAO = 90^\circ - 2r$	9	8,6
	C - AC	10	2
	$\angle BAD = \angle DAE$ $\angle BAE = 180^\circ - 4r$	11	10,9,4
	BE ⊥ AC	12	3
		13	12,5
+	$90^\circ - r = 180^\circ - 4r$ $r = 30^\circ$	14	13,11
	$\angle BOD = 60^\circ$	15	6
	$\angle DAE = 30^\circ$	16	13,9
	$\angle BOD = 2 \cdot \angle DAE$	17	16,15
(1) . . .			
	$\angle BAD = \angle ABD = 30^\circ$	18	16,11,5
$\triangle BAD$	BD = AD	19	18
(2) . . .			

( )  $AD = a$  ( )  $DE = 2$  .

( )  $\sphericalangle EBC = r$

.( )  $\sphericalangle DAC = 45^\circ$

.( )  $\sphericalangle DAE = 45^\circ - r$

(  $\sphericalangle D = 90^\circ$  , )  $\triangle DAE$

$$\tan \sphericalangle DAE = \frac{DE}{AD}$$

$$a = \frac{2}{\tan(45^\circ - r)}$$

$$a = \frac{2}{\tan(45^\circ - r)} :$$

.  $r = 30^\circ$  .

$$a = \frac{2}{\tan(45^\circ - 30^\circ)} = \frac{2}{\tan(15^\circ)} = 7.464$$

$$EC = 7.464 - 2 = 5.464$$

$$S_{\triangle ACE} = \frac{EC \cdot AD}{2} = \frac{5.464 \cdot 7.464}{2} = 20.39$$

. " 20.39  $\triangle ACE$  :

.  $a = 4$  ,  $DE = DE = 2$  .

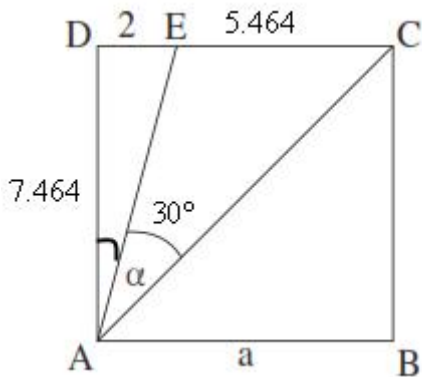
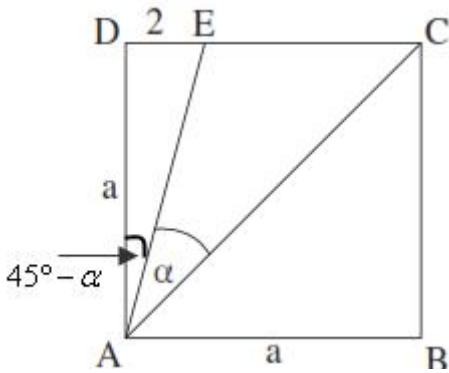
$$4 = \frac{2}{\tan(45^\circ - r)}$$

$$\tan(45^\circ - r) = 0.5$$

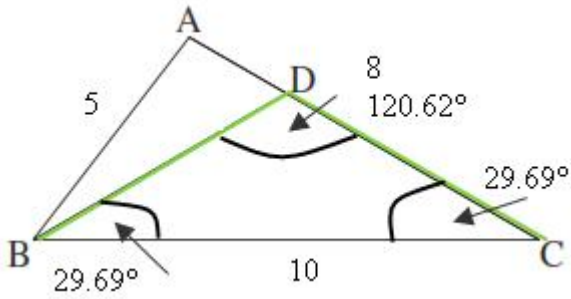
$$45^\circ - r = 26.565^\circ + 180^\circ k$$

$$\boxed{r = 18.435^\circ} \leftarrow k = 0, 0 < r < 45^\circ$$

.  $r = 18.43^\circ$  :



( ) BC = " 10 , ( ) AC = " 8 , ( ) AB = " 5 .  
 . ( ) BD = DC



$(AB)^2 = (AC)^2 + (BC)^2 - 2AC \cdot BC \cdot \cos \sphericalangle C$   
 $5^2 = 8^2 + 10^2 - 2 \cdot 8 \cdot 10 \cdot \cos \sphericalangle C$   
 $160 \cos \sphericalangle C = 139$   
 $\sphericalangle C = 29.69^\circ$

( $\triangle BDC$  )  $\sphericalangle DBC = \sphericalangle C = 29.69^\circ$

( $\triangle BDC$   $180^\circ$  )  $\sphericalangle BDC = 180 - 2 \cdot 29.69^\circ = 120.62^\circ$

$\sphericalangle BDC = 120.62^\circ$  ,  $\sphericalangle DBC = 29.69^\circ$  ,  $\sphericalangle C = 29.69^\circ$  :

,( $R_1$ )  $\triangle ABD$

( $R_2$ )  $\triangle BDC$

$$\frac{BC}{\sin \sphericalangle BDC} = 2R_2$$

$$R_2 = \frac{10}{2 \sin \sphericalangle BDC}$$

$$R_2 = \frac{5}{\sin \sphericalangle BDC}$$

$$\frac{AB}{\sin \sphericalangle ADB} = 2R_1$$

$$R_1 = \frac{5}{2 \sin \sphericalangle ADB}$$

$$R_1 = \frac{2.5}{\sin \sphericalangle ADB}$$

. $180^\circ$  -

$$\sin \sphericalangle ADB = \sin \sphericalangle BDC$$

,  $R_1 : R_2$

$$\frac{R_1}{R_2} = \frac{\frac{2.5}{\sin \sphericalangle ADB}}{\frac{5}{\sin \sphericalangle BDC}} = \frac{1}{2}$$

. 1:2 :

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

$$(x-2)(x+2) \geq 0 \leftarrow x^2 - 4 \geq 0$$

$$x \neq 0$$

$$x \leq -2 \quad x \geq 2$$

$$x \leq -2 \quad x \geq 2 :$$

$$x = 0 \quad y =$$

$$(-2, 0), (2, 0)$$

$$y = 0 \quad x =$$

$$(-2, 0), (2, 0) :$$

$$(-2, 0), (2, 0)$$

$$f'(x) = \frac{\cancel{2}x \cdot x^2}{\cancel{2}\sqrt{x^2 - 4}} - 2x\sqrt{x^2 - 4} = \frac{x^3 - 2x(x^2 - 4)}{x^4\sqrt{x^2 - 4}}$$

$$f'(x) = \frac{x^3 - 2x^3 + 8x}{x^4\sqrt{x^2 - 4}}$$

$$f'(x) = \frac{-x^3 + 8x}{x^4\sqrt{x^2 - 4}}$$

$$0 = -x^3 + 8x \rightarrow 0 = x(-x^2 + 8)$$

$$x = 0 \text{ not o.k.}$$

$$x = \sqrt{8} \rightarrow y = \frac{\sqrt{8-4}}{8} = 0.25 \rightarrow (\sqrt{8}, 0.25)$$

$$x = -\sqrt{8} \rightarrow y = \frac{\sqrt{8-4}}{8} = 0.25 \rightarrow (-\sqrt{8}, 0.25)$$

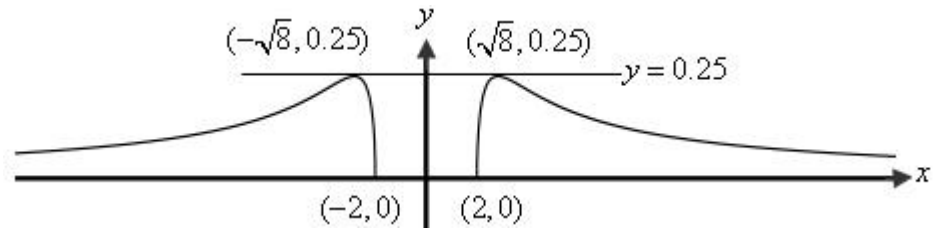
$$y(-3) = \frac{\sqrt{9-4}}{9} = 0.248, \quad y(3) = \frac{\sqrt{9-4}}{9} = 0.248$$

$x$		$-\sqrt{8}$		$-2$	$2$		$\sqrt{8}$	$3$
$f(x)$	$0.248$	$0.25$		$0$	$0$		$0.25$	$0.248$
	↖	Max	↘	Min	Min	↖	Max	↘

$$(\sqrt{8}, 0.25) (-\sqrt{8}, 0.25),$$

$$(-2, 0), (2, 0) :$$

: (1) .



$y = 0.25$  (2)

•  $y = 0.25$  :



,A

(1).

.t - x -

$$f'(t) = g'(t) :$$

$$f(x) = x^2 + 4x + 6$$

$$f'(x) = 2x + 4$$

$$f'(t) = 2t + 4$$

$$g(x) = -x^2 + x$$

$$g'(x) = -2x$$

$$g'(t) = -2t$$

$$-2t = 2t + 4 :$$

$$f'(t) = g'(t) \tag{2}$$

$$2t + 4 = -2t$$

$$4t = -4 \quad /:4$$

$$t = -1 \rightarrow f(-1) = (-1)^2 + 4 \cdot (-1) + 6 = 3 \rightarrow \boxed{A(-1,3)}$$

A(-1,3) :

$$g(x) = -x^2 + c$$

$$A(-1,3) \tag{3}$$

$$3 = -(-1)^2 + c$$

$$\boxed{c = 4}$$

$$c = 4 :$$

$$m = f'(1) = 2$$

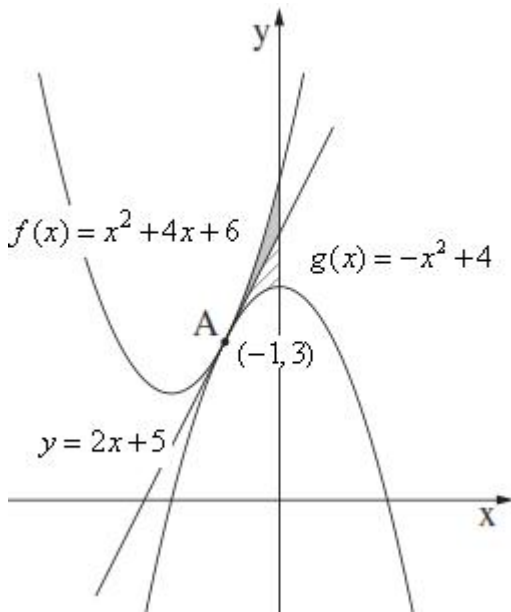
$$, A(-1,3)$$

$$y - 3 = 2(x - (-1))$$

$$\boxed{y = 2x + 5}$$

:

$$, g(x) = -x^2 + 4$$



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$$x^2 + 4x + 6 - (2x + 5)$$

$$x^2 + 4x + 6 - 2x - 5$$

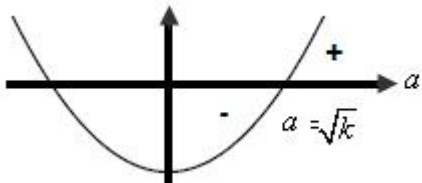
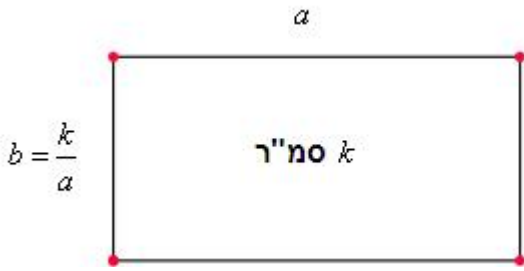
$$x^2 + 2x + 1$$

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$$2x + 5 - (-x^2 + 4)$$

$$2x + 5 + x^2 - 4$$

$$x^2 + 2x + 1$$



היקף המלבן. מניחות

$k$

$b = \frac{k}{a}$  ,  $ab = k$

$b = \frac{k}{a}$

$ab = k$

$$P(a) = 2a + \frac{2k}{a}$$

$$P'(x) = 2 - \frac{2k}{a^2}$$

$$p'(x) = \frac{2a^2 - 2k}{a^2}$$

$$2 = 2a^2 - 2k$$

$$a = \sqrt{k} \leftarrow a > 0$$

$$b = \frac{k}{\sqrt{k}} \rightarrow b = \sqrt{k}$$

$a = \sqrt{k}$

$\sqrt{k}$

$k$

$$8^2 = (\sqrt{k})^2 + (\sqrt{k})^2$$

$$64 = 2k \quad /:2$$

$$k = 32$$

$k = 32$