

$$\frac{100+P}{100} \cdot 600 = 6(100+P) \quad , \quad 900 - P$$

$$\frac{100-P}{100} \cdot 900 = 9(100-P) \quad , \quad 900$$

$$6(100+P) = 9(100-P)$$

$$600 + 6P = 900 - 9P$$

$$15P = 300$$

$$P = 20$$

.20%

$$.8 \cdot 900 = 720 \quad , \quad \frac{100+20}{100} \cdot 600 = 1.2 \cdot 600 = 720$$

. 720

:

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• $A(-8, -12)$, $y = \frac{3}{4}(-8) - 6 = -12$ $y = \frac{3}{4}x - 6$: AB $x = -8$.

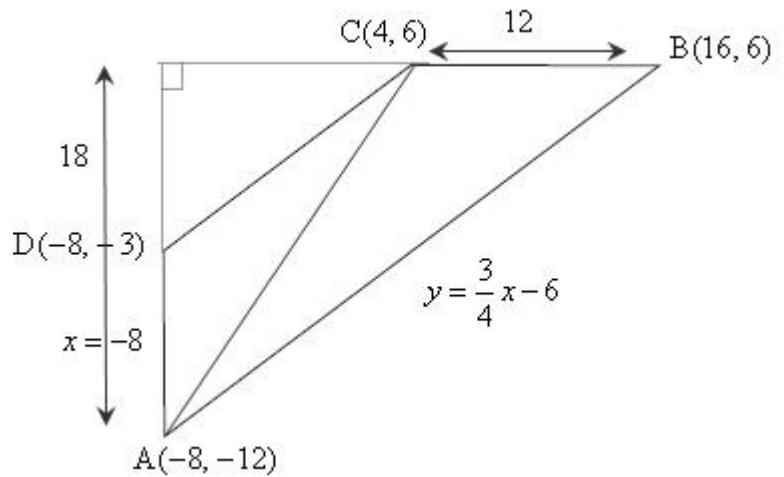
• $y_B = y_C = 6$, 0 CB

• $B(16, 6)$, $x = 16 \leftarrow 6 = \frac{3}{4}x - 6$ $y = \frac{3}{4}x - 6$: AB $y = 6$

• $(-8, y_D)$ D , $m_{CD} = m_{AB} = \frac{3}{4}$, () DC || AB

$$y_D = -3 \leftarrow \frac{3}{4} = \frac{6 - y_D}{4 - (-8)}$$

• $D(-8, -3)$, $B(16, 6)$, $A(-8, -12)$:



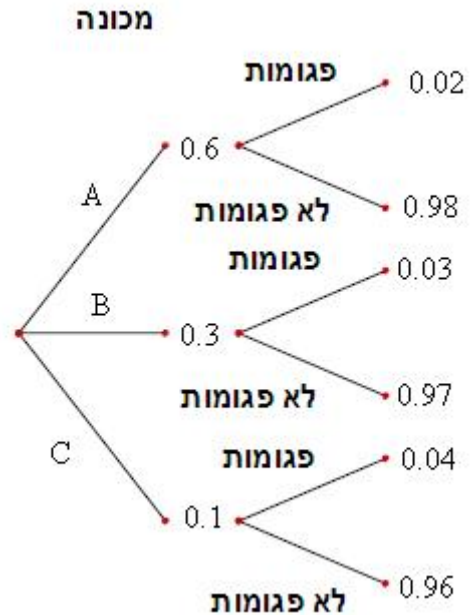
• BC , ΔACB - BC , $\sphericalangle BCA$ (1) .
 • $6 - (-12) = 18$, x - BC y - ,

• 18 :

$$S_{\Delta ACB} = \frac{BC \cdot h_{BC}}{2} = \frac{(16-4) \cdot 18}{2} = 108 \text{ (2)}$$

• " 108 ΔACB

(1).



$$, 0.6 \cdot 0.02 + 0.3 \cdot 0.03 + 0.1 \cdot 0.04 = 0.025 :$$

$$0.025 \cdot 100 = 2.5\%$$

$$. 2.5\% :$$

C , (2)

$$P(\text{C machine} / \text{defective bulb}) = \frac{P(\text{C machine} \cap \text{defective bulb})}{P(\text{defective bulb})} = \frac{0.1 \cdot 0.04}{0.025} = 0.16$$

$$. 0.16 :$$

. $p = 1 - 0.025 = 0.975$, 3 , 5 , 4 :

$$p = 0.975 , n = 5$$

$$P_5(5) = \binom{5}{5} (0.975)^5 (1 - 0.975)^{5-5}$$

$$P_5(5) = 0.975^5$$

$$P_5(5) = 0.8811$$

$$P_5(4) = \binom{5}{4} (0.975)^4 (1 - 0.975)^{5-4}$$

$$P_5(4) = \frac{5!}{4!(5-4)!} \cdot 0.975^4 \cdot 0.025^1$$

$$P_5(4) = 5 \cdot 0.975^4 \cdot 0.025^1$$

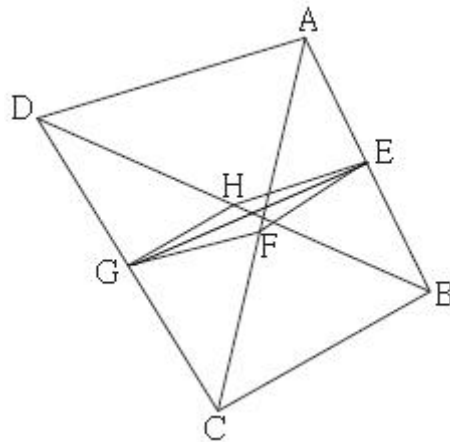
$$P_5(4) = 0.11296$$

$$, 0.0811 + 0.11296 = 0.99406$$

$$1 - 0.99406 = 0.0059 \quad " \quad 3 \quad "$$

$$. 0.0059 :$$

"



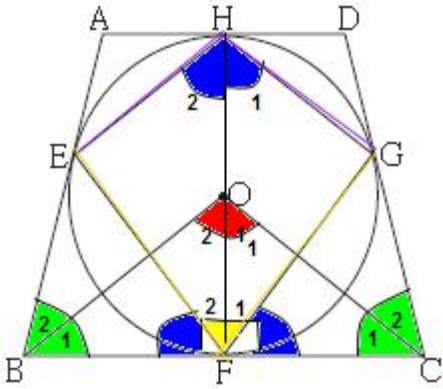
DC G .2 AB E .1
 DB H .4 AC F .3

EF || HG . : "
 $\triangle EHG \cong \triangle EFG$.

	AB E	5	1
	AC F	6	3
	$\triangle ABC$ EF	7	6,5
	EF BC	8	7
	DB H	9	4
	DC G	10	2
	$\triangle BDC$ HG	11	10,9
	HG BC	12	11
	EF HG	13	12,8
. . .			
	$EF = 0.5 \cdot BC$	14	7
	$HG = 0.5 \cdot BC$	15	11
	() $EF = HG$	16	15,14
	() $\sphericalangle HGE = \sphericalangle GEF$	17	13
	() $EG = EG$	18	
	$\triangle EHG \cong \triangle GFE$	19	18,17,16
. . .			

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AD || BC .2

ABCD .1

F

BC .3

H

AD .4

G

CD .5

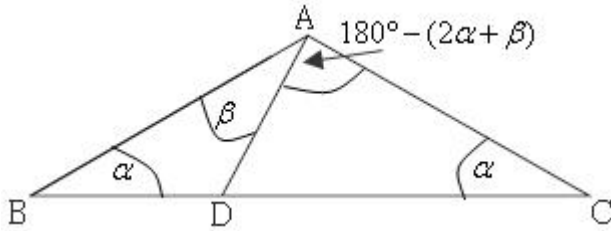
E

AB .6

.EHGF . ΔBOF ≅ ΔCOF . : "

	ABCD	7	1
	$\sphericalangle ABC = \sphericalangle DCB$	8	7
	G CD	9	5
	F BC	10	3
	, $\sphericalangle C_1 = \sphericalangle C_2 = 0.5 \cdot \sphericalangle DCB$	11	10,9
	E AB	12	6
11	$\sphericalangle B_1 = \sphericalangle B_2 = 0.5 \cdot \sphericalangle ABC$	13	12,10
	$\sphericalangle C_1 = \sphericalangle B_1$	14	13,11,8
	() $\sphericalangle OFB = \sphericalangle OFC = 90^\circ$	15	10
	() OF = OF	16	
180°	() $\sphericalangle O_1 = \sphericalangle O_2$	17	16,14
	$\Delta BOF \cong \Delta COF$	18	17,16,15
. .			
	CF = CG	19	10,9
	BF = BE	20	12,9
	() CF = BF	21	18
	() CG = BE	22	21,20,19
	$\Delta CGF \cong \Delta BEF$	23	22,8,21
	() GF = EF	24	23

		,	
	$\sphericalangle GFC = \sphericalangle EFB$	25	23
	$\sphericalangle F_1 = \sphericalangle F_2$	26	25 ,15
	HD = HE	27	26
	EHGF	28	27 ,24
. . .			



(ΔABC)

() $AB = AC$, ΔABC .

() $\sphericalangle ABC = r$

() $\sphericalangle ACB = r$

() $\sphericalangle BAD = s$

) $^\circ$ ΔABC - () $\sphericalangle DAC = 180^\circ - (2r + s)$

:

$$\frac{S_{\Delta ABD}}{S_{\Delta ACD}} = \frac{\cancel{0.5} \cdot AD \cdot \cancel{AB} \cdot \sin \sphericalangle BAD}{\cancel{0.5} \cdot AD \cdot \cancel{AC} \cdot \sin \sphericalangle CAD}$$

$$\frac{S_{\Delta ABD}}{S_{\Delta ACD}} = \frac{\sin s}{\sin(180^\circ - (2r + s))}$$

$$\boxed{\frac{S_{\Delta ABD}}{S_{\Delta ACD}} = \frac{\sin s}{\sin(2r + s)}} \leftarrow \sin(x) = \sin(180^\circ - x)$$

$$\frac{S_{\Delta ABD}}{S_{\Delta ACD}} = \frac{\sin s}{\sin(2r + s)} :$$

$$.s = 30^\circ - \frac{BD}{DC} = \frac{1}{2} .$$

$$\frac{BD}{DC} -$$

, $h \perp BC$

$$\frac{S_{\Delta ABD}}{S_{\Delta ACD}} = \frac{\cancel{0.5} \cdot BD \cdot \cancel{h}}{\cancel{0.5} \cdot DC \cdot \cancel{h}}$$

$$\frac{S_{\Delta ABD}}{S_{\Delta ACD}} = \frac{BD}{DC} \rightarrow \frac{1}{2}$$

:

,

,

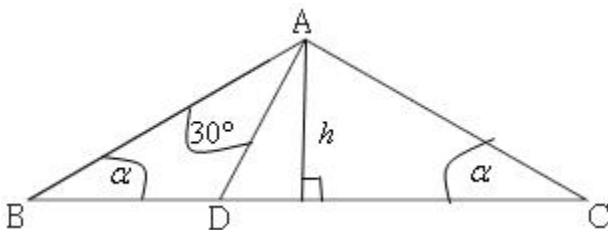
$$\frac{1}{2} = \frac{\sin 30^\circ}{\sin(2r + 30^\circ)}$$

$$\sin(2r + 30^\circ) = 1$$

$$2r + 30^\circ = 90^\circ \leftarrow 0 < r < 90^\circ$$

$$\boxed{r = 30^\circ}$$

$r = 30^\circ$:



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

$$2x - 1 = 0 \rightarrow 2x = 1 \rightarrow x = 0.5$$

$$x \neq 0.5 :$$

(1)

(2)

$$x = 0.5$$

$$x = 0.5$$

$$x = 0.5 : y =$$

:

$$f(0) = \frac{0^2 - 4}{2 \cdot 0 - 1} = 4 \rightarrow (0, 4)$$

$$x = 0$$

$$y =$$

$$0 = \frac{x^2 - 4}{2x - 1} \rightarrow x^2 - 4 = 0 \rightarrow x = \pm 2 \rightarrow (2, 0), (-2, 0)$$

$$y = 0$$

$$x =$$

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

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

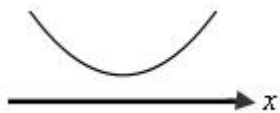
$$f'(x) = \frac{4x^2 - 2x - 2x^2 + 8}{(2x-1)^2}$$

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

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

$$\Delta = (-2)^2 - 4 \cdot 2 \cdot 8 < 0$$

, x



$$x \neq 0.5$$

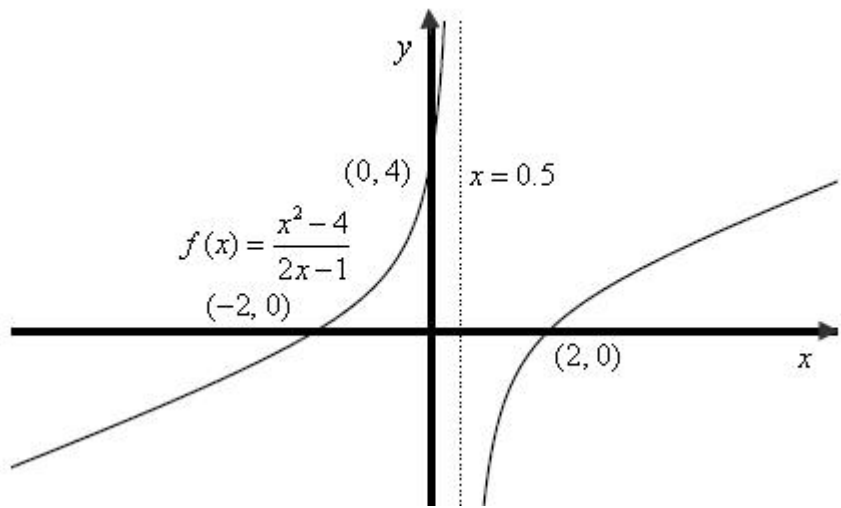
. x

-

$$, x < 0.5$$

$$x > 0.5 :$$

:



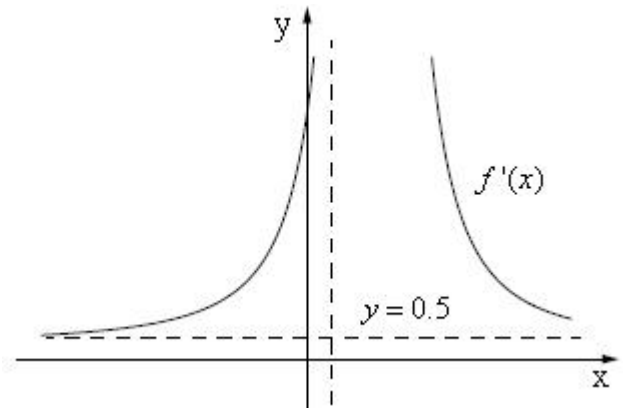
$$f'(x) = \frac{2x^2 - 2x + 8}{(2x - 1)^2} = \frac{2x^2 - 2x + 8}{4x^2 - 4x + 1} :$$

, (2)

(2)

$$, y = \frac{2}{4} = 0.5 :$$

$$. y = 0.5$$



$$. f'(x)$$

$$y = k$$

$$k \leq 0.5$$

$$k \leq 0.5 :$$

$$g(x) = -\sqrt{12-3x}, \quad f(x) = \sqrt{12-3x}$$

$$12-3x \geq 0$$

$$-3x > -12$$

$$x \leq 4$$

$$x \leq 4 :$$

$$x < 4 \quad f(x) \quad x \leq 4 \quad f'(x) = \frac{-3}{2\sqrt{12-3x}}$$

$$x < 4 \quad g(x) \quad x \leq 4 \quad g'(x) = \frac{3}{2\sqrt{12-3x}}$$

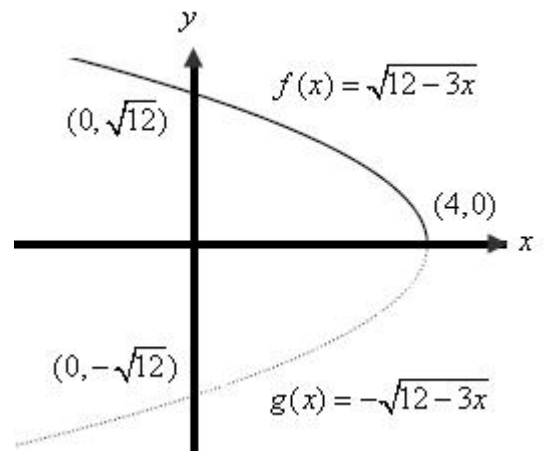
$$x < 4 \quad g(x), x \quad x < 4 \quad f(x) :$$

$$x=0 \quad y-$$

$$g(x) \quad (0, -\sqrt{12}) - f(x) \quad (0, \sqrt{12})$$

$$(4,0) \quad y=0 \quad x-$$

$$(4,0), (0, -\sqrt{12}) : g(x), (4,0), (0, \sqrt{12}) : f(x) :$$



: $x=1$, , (1) .

$$g(1) = -\sqrt{12-3\cdot 1} = -3 \rightarrow (1, -3)$$

$$g'(1) = \frac{3}{2\sqrt{12-3\cdot 1}} = 0.5 \rightarrow m = 0.5$$

$$y+3 = 0.5(x-1) \rightarrow \boxed{y = 0.5x - 3.5}$$

$$f(1) = \sqrt{12-3\cdot 1} = 3 \rightarrow (1, 3)$$

$$f'(1) = \frac{-3}{2\sqrt{12-3\cdot 1}} = -0.5 \rightarrow m = -0.5$$

$$y-3 = -0.5(x-1) \rightarrow \boxed{y = -0.5x + 3.5}$$

, x -

:

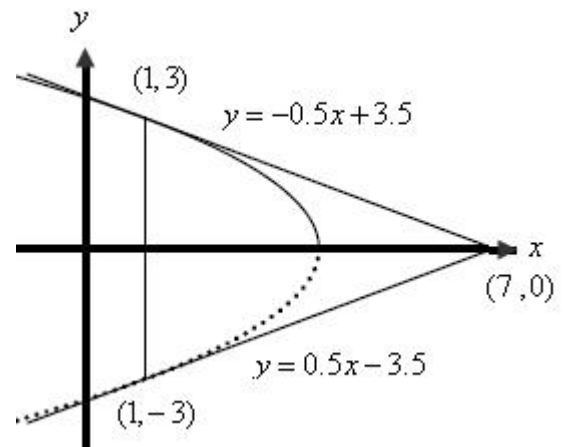
$$\begin{cases} y = 0.5x - 3.5 \\ y = -0.5x + 3.5 \end{cases}$$

$$0.5x - 3.5 = -0.5x + 3.5$$

$$x = 7 \rightarrow y = 0.5 \cdot 7 - 3.5 = 0 \rightarrow \boxed{(7, 0)}$$

(7, 0) :

(2)



$$S = \frac{(7-1) \cdot (3 - (-3))}{2} = \frac{6 \cdot 6}{2} = 18$$

. " 18 :

$\frac{100}{x}$, " x " 100 .
 $\frac{100}{x}$:

$$(16 + \frac{x^2}{400}) -$$

מינימום צלול הנסיוע של המסאית (1)

$$p(x) = \frac{100}{x} \cdot (16 + \frac{x^2}{400})$$

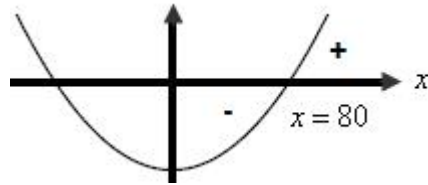
$$p(x) = \frac{1600}{x} + \frac{x}{4}$$

$$p'(x) = -\frac{1600}{x^2} + \frac{1}{4}$$

$$p'(x) = \frac{-6400 + x^2}{4x^2}$$

$$0 = -6400 + x^2$$

$$x = 80 \leftarrow x > 0$$



, ,
 . $x = 80$

$$x = 80 :$$

: $x = 80$ **(2)**

$$p(80) = \frac{1600}{80} + \frac{80}{4} = 40$$

. 40 , " 100 , :