

$$\begin{aligned} \frac{100-10}{100} \cdot x &= 0.9x & y - 10\% &= 0.9y \\ \frac{100+20}{100} \cdot y &= 1.2y & x + 20\% &= 1.2x \\ x + y &= 0.9x + 1.2y \end{aligned}$$

$$\begin{aligned} x + y &= 0.9x + 1.2y & / -0.9x - y \\ 0.1x &= 0.2y & / : 0.1 \\ \boxed{x = 2y} \end{aligned}$$

$$0.9x + y = 5040$$

$$\begin{aligned} x &= 2y \\ 0.9 \cdot 2y + y &= 5040 \\ 1.8y + y &= 5040 \\ 2.8y &= 5040 & / : 2.8 \\ \boxed{y = 1800} \\ x &= 2 \cdot 1800 \\ \boxed{x = 3600} \end{aligned}$$

$$1800 \quad , \quad 3600$$

6 , $x + y = 10$

$y_A = 4$

$6 + y = 10 : x = 6$

$y_A = 4 :$

AD

$$m_{AD} = \frac{y_A - y_D}{x_A - x_D} = \frac{4 - 0}{6 - 8} = \frac{4}{-2} = -2$$

$y - 0 = -2(x - 8)$

$y = -2x + 16$

$y = -2x + 16$ AD :

$m_{BC} = m_{AD} = -2 : BC \parallel AD : ADCD$

BC

$y - 0 = -2(x - 2)$

$y = -2x + 4$

B

$$B \begin{cases} y = -2x + 4 \\ x + y = 10 \end{cases}$$

$x - 2x + 4 = 10$

$-x = 6$

$x = -6 \rightarrow y = 16 \rightarrow B(-6, 16)$

$B(-6, 16) :$

E $y = -2x + 4$ BC (1)

$y_E = 4$ $y = -2x + 4 : x = 0$

$x = 0$ AE , $y_E = y_A = 4$

AE (2)

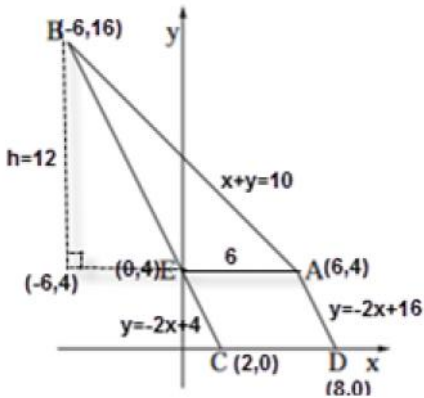
$$S_{\Delta AEB} = \frac{AE \cdot h_{AE}}{2}$$

$AE = x_A - x_E = 6 - 0 = 6$

$h_{AE} = y_B - 4 = 16 - 4 = 12$

$$S_{\Delta AEB} = \frac{6 \cdot 12}{2} = 36$$

36 AEB :



(1) .

$$\begin{array}{r}
 - \bar{A} \qquad \qquad \qquad - A \\
 \qquad \qquad \qquad - \bar{B} \qquad \qquad - B
 \end{array}$$

(1) $P(A) = 0.6 \rightarrow P(\bar{A}) = 0.4$

(2) $N(\bar{B}) = 3N(B) \rightarrow P(\bar{B}) = 3P(B)$

$P(B) + P(\bar{B}) = 1$

$3P(B) + P(B) = 1$

$4P(B) = 1$

$P(B) = 0.25 \rightarrow P(\bar{B}) = 0.75$

(3) $P(A / B) = 0.8$

$$P(A / B) = \frac{P(A \cap B)}{P(B)}$$

$$0.8 = \frac{P(A \cap B)}{0.25}$$

$P(A \cap B) = 0.2$

:

	\bar{A}	A	
0.25	0.05	0.2	- B
0.75	0.35	0.4	\bar{B}
1	0.4	0.6	

$P(A \cap \bar{B}) = 0.4$

:

(2)

$$P(A / \bar{B}) = \frac{P(A \cap \bar{B})}{P(\bar{B})} = \frac{0.4}{0.75} = \frac{8}{15}$$

$\cdot \frac{8}{15}$

:

,"

5 - 4 "

.

"

5 - 4 " :

$$k = 4, n = 5, p = 0.6,$$

$$P_5(4) = \binom{5}{4} (0.6)^4 (1-0.6)^{5-4}$$

$$P_5(4) = \frac{5!}{4!(5-4)!} \cdot 0.6^4 \cdot 0.4^1$$

$$P_5(4) = 5 \cdot 0.6^4 \cdot 0.4$$

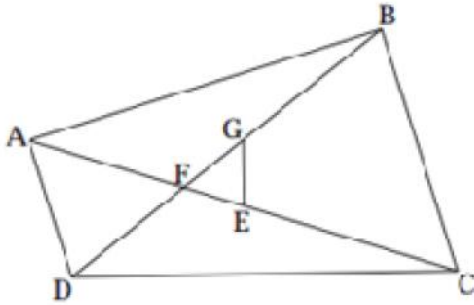
$$P_5(4) = 0.2592$$

$$. 0.6^5 = 0.07776 ,"$$

5 - 5 "

$$. 0.2592 + 0.07776 = 0.33696 :$$

$$. 0.33696 \quad 5 - 4 :$$

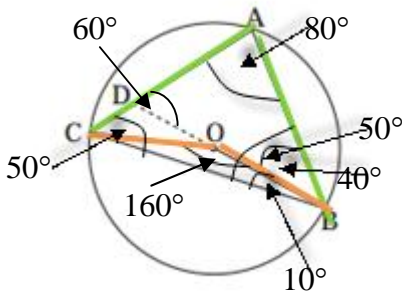


BCEG .1

$$\frac{AF}{FG} = \frac{DF}{FE} \text{ .2 :}$$

AD || BC . ΔFDA ~ ΔFEG . . ΔFEG ~ ΔFBC . : "

	BCEG	3	1
180° -	∠BCE + ∠BGE = 180°	4	3
180° -	∠BGE + ∠FGE = 180°	5	
	() ∠BCE = ∠FGE	6	5,4
	() ∠GFE = ∠CFB	7	
	ΔFEG ~ ΔFBC	8	7,6
. . .			
	$\frac{AF}{FG} = \frac{DF}{FE}$	9	2
	() ∠GFE = ∠AFD	10	
	ΔFDA ~ ΔFEG	11	10,9
. . .			
	∠FAD = ∠FGE	12	11
	∠FAD = ∠BCE	13	12,7
	AD BC	14	13
. . .			



() $\angle BAC = 80^\circ$.

() $AB = AC$

$$\angle ACB = \angle ABC = \frac{180^\circ - 80^\circ}{2} = 50^\circ$$

$180^\circ - \Delta ABC -$)

.(

R AB
 $\Delta CAB -$

$$\frac{AB}{\sin 50^\circ} = 2R$$

$$\boxed{AB = 1.532R}$$

. $AB = 1.532R$:

) $\angle COB = 2 \cdot \angle CAB = 2 \cdot 80^\circ = 160^\circ$.

. $\angle COB = 160^\circ$:

() $OB = OC$ (1) .

$$\angle OCB = \angle OBC = \frac{180^\circ - 160^\circ}{2} = 10^\circ$$

.("

$180^\circ - \Delta ABC -$)

() $\angle ABD = \angle ABC - \angle OBC = 50^\circ - 10^\circ = 40^\circ$

. $\angle ABD = 40^\circ$:

.($180^\circ - \Delta ABD -$) $\angle ADB = 180^\circ - (40^\circ + 80^\circ) = 60^\circ$ (2)

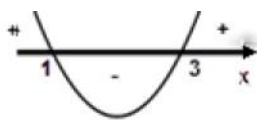
. $\Delta DAB -$

$$\frac{AB}{\sin 60^\circ} = \frac{BD}{\sin 80^\circ}$$

$$1.532R = \frac{5 \sin 60^\circ}{\sin 80^\circ}$$

$$\boxed{R = 2.87 \text{ cm}}$$

. $R =$ " 2.87 :



$x \leq 1$ $x \geq 3$, ,

$f(0) = \sqrt{0^2 - 4 \cdot 0 + 3} = \sqrt{3} \rightarrow (0, \sqrt{3})$

$(1, 0)$ - $(3, 0)$:

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

$x^2 - 4x + 3 \geq 0$
 $(x-1)(x-3) \geq 0$

$x \leq 1$ $x \geq 3$:

$x = 0$ $y =$

$y = 0$ $x =$

$(1, 0)$, $(3, 0)$, $(0, \sqrt{3})$:

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

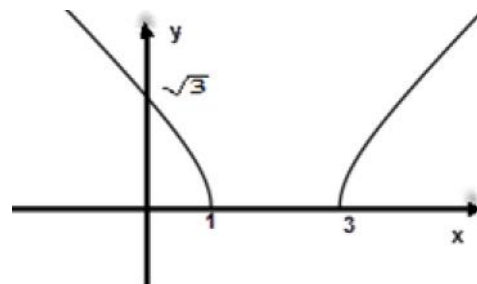
$2x - 4 = 0$

~~$x = 2$~~

$f'(4) = \frac{2 \cdot 4 - 4}{+} > 0 : x > 3$

$f'(0) = \frac{2 \cdot 0 - 4}{+} < 0 : x < 1$

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



$y = x - 2$

$x - 2 = \sqrt{x^2 - 4x + 3} \quad ()^2$

$(x - 2)^2 = x^2 - 4x + 3$

$x^2 - 4x + 4 = x^2 - 4x + 3$

$4 = 3$

:

"

, $g(x) = x^2 - 4x + 3$

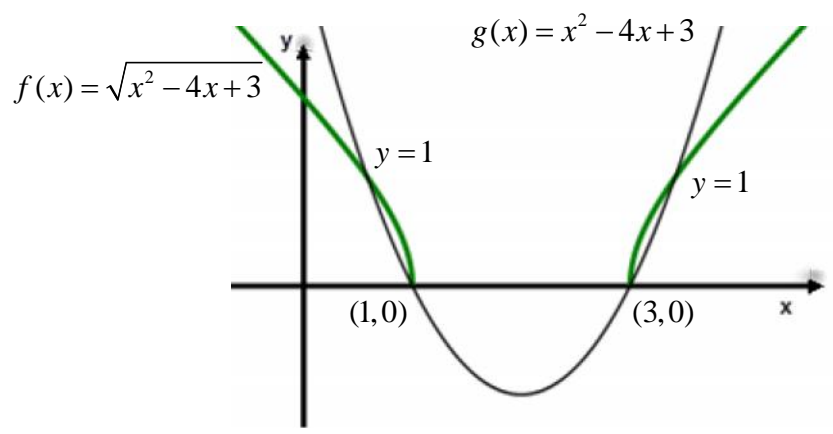
.($(1,0)$, $(3,0)$) $x -$

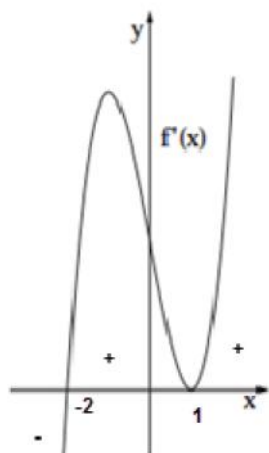
, $f(x) = \sqrt{x^2 - 4x + 3}$

, $x -$

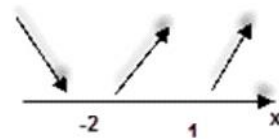
. $\sqrt{1} = 1$, 1 $y -$

. () $\sqrt{y} > y$ $y > 1$ $\sqrt{y} < y$ $0 < y < 1$





$(-2, -10)$ ()



$x = 1$ - ,

$x = -2$

$x < -2$,

$x > -2$:

$x = -2$ (2)

$f'(x) = 4x^3 - 12x + 8$

(3)

$y = -10$

$(-2, -10)$

$$f(x) = \int f'(x) dx$$

$$f(x) = \int (4x^3 - 12x + 8) dx$$

$$f(x) = \frac{4x^4}{4} - \frac{12x^2}{2} + 8x + c$$

$$-10 = (-2)^4 - 6(-2)^2 + 8(-2) + c$$

$$14 = c$$

$$f(x) = x^4 - 6x^2 + 8x + 14$$

$$f(x) = x^4 - 6x^2 + 8x + 14 :$$

$x = 1$ - $x = -2$,

$f(-2) = -10$

$f(1) = 1^4 - 6 \cdot 1^2 + 8 \cdot 1 + 14 = 17$

$(1, 17)$, $(-2, -10)$:

$0 < x < 10$, x .
 x ,
 $10 - x$.
 $10 - x$ - :

.(**מינימום סכום השטחים האפורים**) .

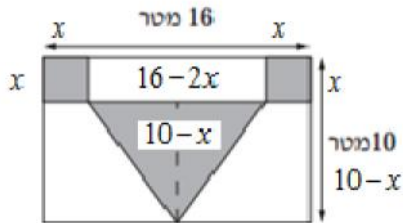
$$2 \cdot x \cdot x = 2x^2$$

:

$$10 - x \quad 16 - 2x$$

$$\frac{(16 - 2x) \cdot (10 - x)}{2} = \frac{160 - 16x - 20x + 2x^2}{2} = \frac{2x^2 - 36x + 160}{2} = x^2 - 18x + 80 :$$

$$2x^2 + x^2 - 18x + 80 = 3x^2 - 18x + 80$$



$$S(x) = 3x^2 - 18x + 80$$

$$S'(x) = 6x - 18$$

$$6x - 18 = 0$$

$$6x = 18 \quad /:6$$

$$x = 3$$

$$S''(x) = 6 > 0 \rightarrow \text{Min}$$

$x = 3$:

$$S(3) = 3 \cdot 3^2 - 18 \cdot 3 + 80 = 53$$

$x = 3$.

$$16 \cdot 10 = 160$$

$$\frac{53}{160} \cdot 100\% = 33\frac{1}{8}\%$$

$$33\frac{1}{8}\%$$

: