

$$\begin{cases} x + y = 5 \\ 2(m - x) = y - 4 \end{cases}$$

$$y = 5 - x :$$

:

$$2(m - x) = 5 - x - 4$$

$$2m - 2x = 5 - x - 4$$

$$-x = 1 - 2m \quad /: (-1)$$

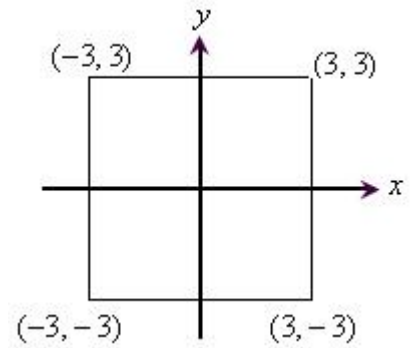
$$\boxed{x = 2m - 1}$$

$$y = 5 - (2m - 1)$$

$$\boxed{y = 6 - 2m}$$

$$(2m - 1, 6 - 2m)$$

: ,



$$, -3 < y < 3 \quad -3 < x < 3 :$$

$$-3 < 6 - 2m < 3 \quad -3 < 2m - 1 < 3 :$$

$-3 < 6 - 2m < 3$		$-3 < 2m - 1 < 3$	
$-3 < 6 - 2m$	$6 - 2m < 3$	$-3 < 2m - 1$	$2m - 1 < 3$
$2m < 9$	$-2m < -3$	$-2m < 2$	$2m < 4$
$m < 4.5$	$m > 1.5$	$m > -1$	$m < 2$
$1.5 < m < 4.5$		$-1 < m < 2$	
$1.5 < m < 2$			

$$1.5 < m < 2 :$$

$$a_7 = 32 - \frac{2}{a_3} = \frac{1}{a_1} - \frac{1}{a_2}$$

:

$$\begin{cases} 1. \frac{2}{a_3} = \frac{1}{a_1} - \frac{1}{a_2} \\ 2. a_7 = 32 \end{cases}$$

$$1. \frac{2}{a_1 q^2} = \frac{1}{a_1} - \frac{1}{a_1 q} \quad / \cdot a_1 q^2$$

$$2 = q^2 - q$$

$$0 = q^2 - q - 2$$

$$0 = (q-2)(q+1)$$

$$\boxed{q=2} \quad \boxed{q=-1}$$

$$2. a_1 q^6 = 32$$

$$q=2 \rightarrow a_1 \cdot 2^6 = 32 \rightarrow \boxed{a_1 = 0.5}$$

0

 $q = -1$ 

10 -

20

.0

20

,

 $q = 2$ 

$$S_{20} = \frac{0.5(2^{20} - 1)}{2 - 1} = 524,287.5$$

$$a_1 = 0.5, \quad q = 2, \quad n = 20$$

.524,287.5 ,0 :

20 :

---

$(AB > CD, AB \parallel CD)$  ABCD .1

$\sphericalangle BCM = \sphericalangle DCM$  .2

$\sphericalangle ADM = \sphericalangle CDM$  .3

$MA = MB$  .4

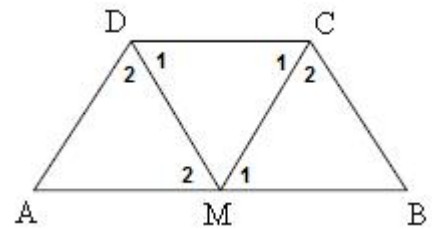
$BC = CD$  .5

: "

ABCD .

DCBM .1 .

AB .2





	$\sphericalangle C_1 = \sphericalangle C_2$	6	2
	$AB \parallel CD$	7	1
	$\sphericalangle M_1 = \sphericalangle C_1$	8	7
	$\sphericalangle M_1 = \sphericalangle C_2$	9	8,7
$\Delta MBC$	$CB = MB$	10	9
	$\sphericalangle D_1 = \sphericalangle D_2$	11	3
	$\sphericalangle D_1 = \sphericalangle M_2$	12	7
	$\sphericalangle D_2 = \sphericalangle M_2$	13	12,11
$\Delta MAD$	$MA = DA$	14	13
	$MA = MB$	15	4
	$DA = CB$	16	15,10
	ABCD	17	1
	" ABCD	18	17,16
. . .			
	$BC = CD$	19	1
	$MB = CD$	20	5
	$MB \parallel CD$	20	7
	DCBM	21	20
	DCBM	22	21,19
.1 . . .			
	AB	23	21,9
	M	24	23,22
	$MB = R$	25	15
	$DM = MB = R$	26	25,22
	$\sphericalangle ADC = \sphericalangle BCD$	27	18
2 -	$\frac{\sphericalangle ADC}{2} = \frac{\sphericalangle BCD}{2}$	28	27
	$\sphericalangle D_1 = \sphericalangle C_1$	29	28,11,6
$\Delta DMC$	$DM = CM$	30	29
	$CM = R$	31	30,26
	AB C, D	32	31,26,23
.2 . . .			

AB || CD .1

A AE .2

C CE .3

AE = 15 .4

BN = 7 .5

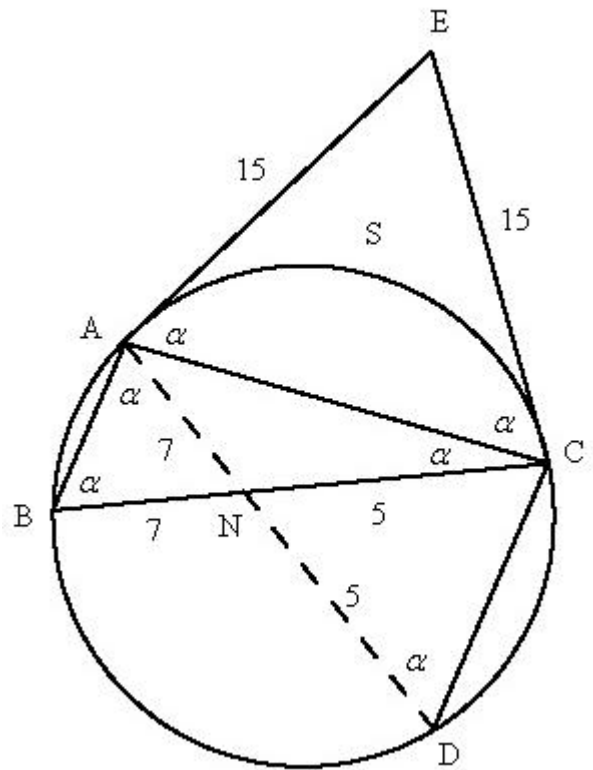
AD = 12 .6

S - ACE .7

: "

$\angle BAD = \angle CAE$  .

S NDC .





	A	AE	8
		$\sphericalangle CAE = \sphericalangle CDA$	9
		$AB \parallel CD$	10
		$\sphericalangle BAD = \sphericalangle CDA = r$	11
		$\sphericalangle BAD = \sphericalangle CAE = r$	12
. . .			
		$\sphericalangle DCB = \sphericalangle BAD = r$	13
	C	CE	14
		$EA = EC$	15
$\Delta ACE$		$\sphericalangle ECA = \sphericalangle CAE = r$	16
		$\sphericalangle ABC = \sphericalangle ECA = r$	17
		$\sphericalangle ADC = \sphericalangle ABC = r$	18
	. .	$\Delta NDC \sim \Delta ACE$	19
		$\frac{ND}{AC} = \frac{NC}{AE} = \frac{DC}{CE}$	20
		$BN = 7$	20
		$\sphericalangle NAB = \sphericalangle ABN = r$	21
$\Delta ABN$		$AN = BN = 7$	22
		$AD = 12$	23
		$DN = AD - AN = 12 - 7 = 5$	24
		$\sphericalangle NBC = \sphericalangle NDC = r$	25
$\Delta CBN$		$NC = ND = 5$	26
		$\sphericalangle ADC = \sphericalangle BCD$	27
		$AE = 15$	28
		$\frac{NC}{AE} = \frac{5}{15} = \frac{1}{3}$	29
		$\frac{S_{\Delta NDC}}{S_{\Delta ACE}} = \left(\frac{1}{3}\right)^2 = \frac{1}{9}$	30
		$S_{\Delta ACE} = S$	31
		$\frac{S_{\Delta NDC}}{S} = \frac{1}{9}$	32
		$S_{\Delta NDC} = \frac{S}{9}$	33
. . .			



:  
 .  
 - A  
 -  $\bar{A}$   
 - B  
 -  $\bar{B}$

$$P(A) = 0.45 \rightarrow P(\bar{A}) = 0.55$$

$$P(B) = 0.2 \rightarrow P(\bar{B}) = 0.8$$

$$P(A \cup B) = 0.5 \rightarrow P(\bar{A} \cap \bar{B}) = 1 - 0.5 = 0.5$$

$$P(\bar{A} \cap \bar{B}) = 1 - P(A \cup B), \quad , \quad ,$$

1 ,

	$\bar{A}$	A	
0.2	0.05	0.15	- B
0.8	0.5	0.3	- $\bar{B}$
1	0.55	0.45	

P( / )

$$P(A/B) = \frac{P(A \cap B)}{P(B)} = \frac{0.15}{0.2} = 0.75$$

. 0.75 :

P( / ) .

$$P(B/A) = \frac{P(B \cap A)}{P(A)} = \frac{0.15}{0.45} = \frac{1}{3}$$

,

5 -

$$n = 6, p = \frac{1}{3}$$

$$P(k) = \binom{n}{k} (p)^k (1-p)^{n-k}$$

" 6 5 " :

6

5

$$P_6(6) = \binom{6}{6} \left(\frac{1}{3}\right)^6 \left(1 - \frac{1}{3}\right)^{6-6}$$

$$P_6(5) = \binom{6}{5} \left(\frac{1}{3}\right)^5 \left(1 - \frac{1}{3}\right)^{6-5}$$

$$P_6(6) = \frac{6!}{6!(6-6)!} \cdot \left(\frac{1}{3}\right)^6 \cdot \left(\frac{2}{3}\right)^0$$

$$P_6(5) = \frac{6!}{6!(6-5)!} \cdot \left(\frac{1}{3}\right)^5 \cdot \frac{2}{3}$$

$$P_6(6) = 1 \cdot \left(\frac{1}{3}\right)^6 \cdot 1$$

$$P_6(5) = 6 \cdot \left(\frac{1}{3}\right)^5 \cdot \frac{2}{3}$$

$$P_6(6) = \frac{1}{729}$$

$$P_6(5) = \frac{4}{243}$$

$$P = \frac{4}{243} + \frac{1}{729} = \frac{13}{729} = 0.0178 :$$

,

,

:

$$\cdot \frac{13}{729}$$

:

-

-

-

-

-

$$P(\text{אדום}) = 0.6 \rightarrow P(\text{לא אדום}) = 0.4 \quad .i$$

$$P(\text{צוף} / \text{אדום}) = 0.6 \rightarrow P(\text{לא צוף} / \text{אדום}) = 0.4 \quad .ii$$

$$P(\text{לבן} / \text{לא אדום}) = 0.5 \rightarrow P(\text{לא לבן} / \text{לא אדום}) = 0.5 \quad .iii$$

$$(ii) \quad P(\text{צוף} / \text{לא אדום}) = P(\text{לא צוף} / \text{לא אדום}) \rightarrow P(\text{צוף} / \text{לא אדום}) = 0.4 \quad .iv$$

$$P(\text{צוף}) = P(\text{לא צוף}) \quad .v$$

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$$P(\text{צוף} / \text{לא אדום}) \neq P(\text{צוף}) :$$

---


$$: \quad , P(\text{צוף} / \text{אדום}) = 0.5 :$$

$$0.5 = \frac{P(\text{צוף} \cap \text{אדום})}{P(\text{צוף})} = \frac{P(\text{אדום} \cap \text{צוף})}{0.6} \rightarrow P(\text{אדום} \cap \text{צוף}) = 0.3$$

$$P(\text{לבן}) = P(\text{לא לבן}) = x :$$

$$: \quad , P(\text{לבן} / \text{לא אדום}) = 0.6 :$$

$$0.6 = \frac{P(\text{לבן} \cap \text{לא אדום})}{P(\text{לבן})} = \frac{P(\text{לא אדום} \cap \text{לבן})}{x} \rightarrow P(\text{לא אדום} \cap \text{לבן}) = 0.6x$$

$$: \quad , P(\text{צהוב} / \text{לא אדום}) = 0.4 :$$

$$0.4 = \frac{P(\text{צהוב} \cap \text{לא אדום})}{P(\text{צהוב})} = \frac{P(\text{לא אדום} \cap \text{צהוב})}{x} \rightarrow P(\text{לא אדום} \cap \text{צהוב}) = 0.4x$$

---

0.6	0.3	0.4x	0.6x	
0.4				
1		x	x	

:

$$0.6 = 0.3 + 0.4x + 0.6x \rightarrow x = 0.3$$

---

0.6	0.3	0.12	0.18	
0.4	0.1	0.18	0.12	
1	0.4	0.3	0.3	

: ,

$$P(\text{צוף} / \text{צהוב}) = \frac{P(\text{צוף} \cap \text{צהוב})}{P(\text{צוף})} = \frac{0.12}{0.6} = 0.2$$

. 0.2 , , :

$$P( / ) \neq P( ) :$$

: