

$$\text{I } a(1-ax)x = y$$

$$\text{II } 2(ax-y)+3(x+y)+1=0$$

(1)

$$\text{I } a(1-ax)x = y \rightarrow a - a^2x = y \rightarrow a^2x + y - a = 0$$

$$\text{II } 2(ax-y)+3(x+y)+1=0 \rightarrow 2ax - 2y + 3x + 3y + 1 = 0 \rightarrow (2a+3)x + y + 1 = 0$$

 $x -$  $y -$ 

$$\cdot \left( \begin{array}{l} \phantom{x} \\ \phantom{y} \end{array} \right)$$

$$a^2 = 2a + 3$$

$$a^2 - 2a - 3 = 0$$

$$(a-3)(a+1) = 0$$

$$a \neq -1, 3 \quad :$$

(2)

$$a = 3 \quad :$$

(3)

$$a = -1 \quad :$$

$$a = 3$$

$$\text{I } 9x + y - 3 = 0 \rightarrow y = -9x + 3$$

$$\text{II } 9x + y + 1 = 0 \rightarrow y = -9x - 1$$

$$\cdot \left( \begin{array}{l} 4 \\ \phantom{x} \end{array} \right) \text{II } \text{I} \quad :$$

$$\cdot a \neq -1, 3$$

 $x -$ 

(1)

$$\begin{cases} (2a+3)x + y + 1 = 0 & / \cdot (-1) \\ a^2x + y - a = 0 \end{cases}$$

$$+ \begin{cases} -(2a+3)x - y = 1 \\ a^2x + y = a \end{cases}$$

$$(a^2 - 2a - 3)x = 1 + a$$

$$(a-3)(a+1)x = a+1 \quad / : (a-3)(a+1) \neq 0$$

$$\boxed{x = \frac{1}{a-3}}$$

$$\cdot a \neq -1, 3, \quad x = \frac{1}{a-3} \quad :$$

$$\cdot \frac{1}{a-3} = -2 \rightarrow a = 2.5 \quad :$$

$$(-2, t) \quad (2)$$

$$\cdot 6.25 \cdot (-2) + t - 2.5 = 0 \rightarrow \boxed{t=15} \quad : \quad a^2x + y - a = 0 \quad x = -2, \quad a = 2.5$$

$$\cdot t = 15 \quad :$$

"

$$0 < q < 1, a_1, a_2, a_3, \dots$$

$$a_n^*, \frac{a_{n+1}^*}{a_n^*} = -\frac{a_{n+1}}{a_n} = -q$$

$$\frac{a_1}{1-(-q)} = 3 \rightarrow a_1 = 3(1+q) : S^* = 3$$

$$\frac{a_2}{1-q} = 10 \rightarrow a_2 q = 10(1-q) : S^{**} = 10 :$$

$$\frac{1}{q} = \frac{3(1+q)}{10(1-q)} :$$

$$10(1-q) = 3q(1+q)$$

$$10 - 10q = 3q + 3q^2$$

$$0 = 3q^2 + 13q - 10$$

$$q_{1,2} = \frac{-13 \pm 17}{6}$$

$$\boxed{q = \frac{2}{3}} \leftarrow 0 < q < 1$$

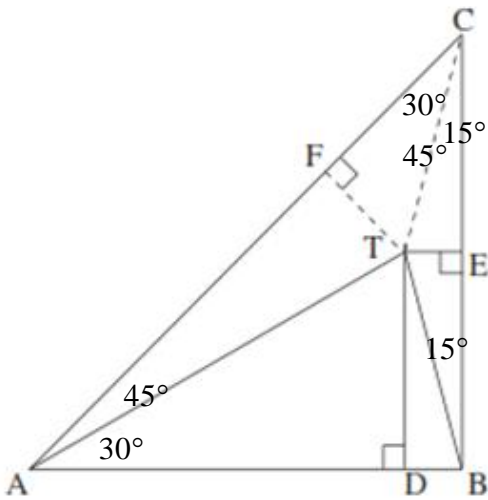
$$\frac{2}{3} :$$

$$\frac{S}{S^*} = \frac{\frac{a_1}{1-q}}{\frac{a_1}{1+q}}$$

$$\frac{S}{S^*} = \frac{a_1}{1-q} \cdot \frac{1+q}{a_1}$$

$$\frac{S}{S^*} = \frac{1+q}{1-q} = \frac{1+\frac{2}{3}}{1-\frac{2}{3}}$$

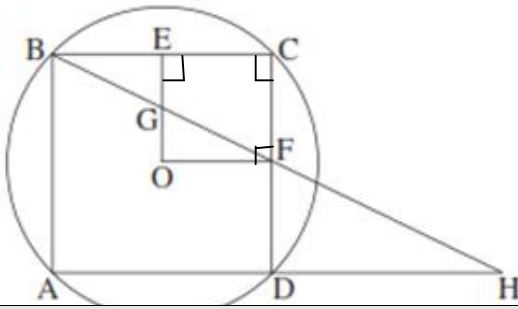
$$\boxed{\frac{S^*}{S} = 5}$$



$\angle TAB = 30^\circ$  .3  $AB = BC$  .2  $\angle ABC = 90^\circ$  .1  
 $\angle TEC = \angle TEB = 90^\circ$  .6  $\angle TDA = \angle TDB = 90^\circ$  .5  $AT = AB$  .4  
 $\angle TFC = \angle TFA = 90^\circ$  .7 .  
 $TD = \frac{1}{2}BC$  (2)  $TD = \frac{1}{2}AT$  (1) . : "  
 $\triangle ATD \sim \triangle CTF$  .  $TB = TC$  .

	$\angle TAB = 30^\circ$	8	3
	$\angle TDA = \angle TDB = 90^\circ$	9	5
$30^\circ, 60^\circ, 90^\circ$ AATD - $30^\circ$	$TD = \frac{1}{2}AT$	10	9,8
(1) . . .			
	$AB = BC$	11	2
	$AT = AB$	12	4
	$AT = BC$	13	12,11
	$TD = \frac{1}{2}BC$	14	13,10
(2) . . .			
	$\angle TEC = \angle TEB = 90^\circ$	15	6
	$\angle ABC = 90^\circ$	16	1
	TEBD	17	16,15,9
	$TD = EB$	18	17
	$EB = \frac{1}{2}BC$	19	18,14
	$TB = TC$ $\triangle CTB$	20	19,15
. . .			
AATB $180^\circ$	$\angle TBA = \frac{180^\circ - 30^\circ}{2} = 75^\circ$	21	12,8
	$\angle TBE = 15^\circ$	22	21,16

$\Delta CTB$	$\sphericalangle TCE = 15^\circ$	<b>23</b>	<b>22 ,20</b>
$AABC$ $180^\circ$	$\sphericalangle BCA = \frac{180^\circ - 90^\circ}{2} = 45^\circ$	<b>24</b>	<b>16 ,11</b>
	$\sphericalangle TCF = 30^\circ$	<b>25</b>	<b>24 ,23</b>
	<b>( )</b> $\sphericalangle TCF = \sphericalangle TAB$	<b>26</b>	<b>25 ,8</b>
	$\sphericalangle TFC = 90^\circ$	<b>27</b>	<b>7</b>
	<b>( )</b> $\sphericalangle TFC = \sphericalangle TDA$	<b>28</b>	<b>27 ,9</b>
	$\Delta ATD \sim \Delta CTF$	<b>29</b>	<b>28 ,26</b>
. . .			



$\sphericalangle OEB = \sphericalangle OEC = 90^\circ$  .3

ABCD .2

O .1

$\sphericalangle OFC = \sphericalangle OFD = 90^\circ$  .4

EG = GO . ECFO . : "

$\frac{EG}{GO} = \frac{BE}{OF} = \frac{1}{1}$  (2)  $\triangle BCF \cong \triangle HDF$  (1) .

	O	5	1
	ABCD	6	2
	$\sphericalangle C = 90^\circ$	7	6
	$\sphericalangle OEB = \sphericalangle OEC = 90^\circ$	8	3
	$\sphericalangle OFC = \sphericalangle OFD = 90^\circ$	9	4
	ECFO	10	9,8,7
	BC = CD	11	6
	OE = OF	12	11,9,8,5
	ECFO	13	12,10
. . .			
	BE = EC	14	8,5
	OF = EC	15	13
	OF = BE	16	15,14
	EC    OF	17	13
2	$\frac{EG}{GO} = \frac{BE}{OF} = \frac{1}{1}$	18	17
( $\triangle BEG \cong \triangle FOG$ )	EG = GO	19	18
. . .			
	( ) CF = DF	20	9,5
	( ) $\sphericalangle CFB = \sphericalangle HFD$	21	
	EC    OF	22	6
	( ) $\sphericalangle C = \sphericalangle FDH$	23	22
	$\triangle BCF \cong \triangle HDF$	24	23,20,21
(1) . . .			

	$BC = DH$	<b>25</b>	<b>24</b>
	$EG = \frac{EO}{2}$	<b>26</b>	<b>19</b>
	$EO = EC$	<b>27</b>	<b>13</b>
	$EG = \frac{BC}{4}$	<b>28</b>	<b>27 ,26 ,20</b>
	$\frac{EG}{DH} = \frac{1}{4}$	<b>29</b>	<b>28 ,25</b>
<b>(2) . . .</b>			

∴ ,  $p = \frac{8}{10} \cdot \frac{7}{9} \cdot \frac{6}{8} = \frac{7}{15}$

$$p = \frac{8}{10} \cdot \frac{7}{9} \cdot \frac{6}{8} = \frac{7}{15}$$

∴ ,  $p = \left(\frac{8}{10}\right)^3 = 0.512$

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$$0.512 > \frac{7}{15}$$

∴  $k = 2, p = \frac{8}{10} = 0.8, n = 3$

$$k = 2, p = \frac{8}{10} = 0.8, n = 3$$

$$P_3(2) = \binom{3}{2} (0.8)^2 (1-0.8)^{3-2}$$

$$P_3(2) = \frac{3!}{2!(3-2)!} \cdot 0.8^2 \cdot 0.2^1$$

$$P_3(2) = 3 \cdot 0.8^2 \cdot 0.2^1$$

$$P_3(2) = 0.384$$

$$p = 0.512 + 0.384 = 0.896$$

$$P(3 \text{ balls are blue} / \text{at least 2 are blue}) = \frac{P(3 \text{ balls are blue} \cap \text{at least 2 are blue})}{P(\text{at least 2 are blue})} = \frac{0.512}{0.896} = \frac{4}{7}$$

$$\frac{4}{7}$$

-  $\bar{A}$

600 -

600 -

- A

:

- S

- B

-  $\bar{B}$

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$$P(A) = 0.5 \rightarrow P(\bar{A}) = 0.5$$

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

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

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

$$0.6 = \frac{P(B \cap A)}{0.5}$$

$$\boxed{P(B \cap A) = 0.3}$$

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

$$0.75 = \frac{0.3}{P(B)}$$

$$\boxed{P(B) = 0.4}$$

$$(0.6 > 0.4) P(B/A) > P(A),$$

600 -

.( , , :

600 -

:

.( )

- D .

$$P(D) = 0.3 \rightarrow P(\bar{D}) = 0.5$$

$$P(D/B) = 0.3 \rightarrow P(\bar{D}/B) = 0.7$$

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

$$0.25 = \frac{P(D \cap B)}{0.4}$$

$$\boxed{P(D \cap B) = 0.1}$$



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

$$P(B/D) = \frac{0.1}{0.3}$$

$$P(B/D) = \frac{1}{3} < \frac{1}{2}$$

600 -

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