



5. Mateo is playing a board game that involves rolling two number cubes. He wants to roll doubles or a sum of 6. Suppose Mateo rolls the pair of number cubes 100 times. Which option shows the best prediction of the number of times Mateo will get doubles or a sum of 6?

- a. 3  
b. 17  
c. 28  
d. 44

6. Jocelyn has a bag that contains the following tiles.



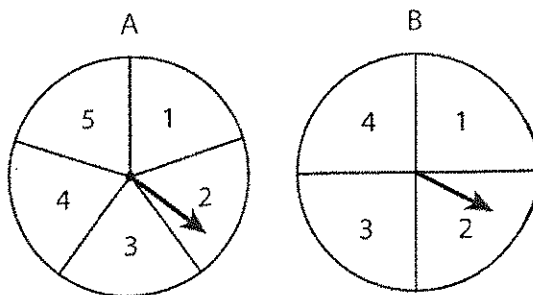
Jocelyn takes a tile from the bag without looking. Then she puts the tile back in the bag. Next, she takes a tile from the bag again without looking. Consider the following events.

$ZF$ : She takes Z first.

$ZS$ : She takes Z second.

Which statement is true?

- a.  $ZF$  and  $ZS$  are dependent, and  $P(ZS|ZF)$  is  $\frac{1}{3}$ .  
b.  $ZF$  and  $ZS$  are dependent, and  $P(ZS|ZF)$  is  $\frac{1}{2}$ .  
c.  $ZF$  and  $ZS$  are independent, and  $P(ZS|ZF)$  is  $\frac{1}{3}$ .  
d.  $ZF$  and  $ZS$  are independent, and  $P(ZS|ZF)$  is  $\frac{1}{2}$ .
7. Lisa and Kia are in a basketball game. Prior to this game, Lisa has made 6 free throws out of 20 attempts, and Kia has made 10 free throws out of 16 attempts. Lisa is at the free-throw line, ready to shoot. Kia will attempt a free throw after Lisa attempts hers. Based on their records, which option shows the best approximation of the probability that at least one of them will make the free throw?
- a. 46%  
b. 63%  
c. 74%  
d. 93%
8. Remy spins spinner A and then spins spinner B. What is the probability that his first spin is odd if the product of his spins is even?



- a. 0  
b.  $\frac{3}{7}$   
c.  $\frac{1}{2}$   
d.  $\frac{3}{5}$

9. There were 98 students who answered a survey about where to have a class party; 56 of those answering were male and 42 were female. Of the 56 males, 32 voted for the community swim club and 24 voted for the park pavilion. Of the 42 females, 24 voted for the swim club and 18 voted for the pavilion.

Consider the following events that apply to a random student in the survey sample.

$F$ : The student is female.

$S$ : The student voted for the swim club.

Which statement is true about events  $F$  and  $S$ ?

- Events  $F$  and  $S$  are dependent and  $P(F|S) < P(S|F)$ .
  - Events  $F$  and  $S$  are dependent and  $P(F|S) = P(S|F)$ .
  - Events  $F$  and  $S$  are independent and  $P(F|S) < P(S|F)$ .
  - Events  $F$  and  $S$  are independent and  $P(F|S) = P(S|F)$ .
10. The table below shows votes by students for their favorite teacher.

Favorite teacher	Student votes by grade				Total
	9	10	11	12	
Ms. Diaz	48	72	72	48	240
Mr. Glover	60	20	48	32	160
<b>Total</b>	108	92	120	80	400

Consider the following events.

$D$ : A student votes for Ms. Diaz.

$G$ : A student votes for Mr. Glover.

$NINE$ : A student is in the ninth grade.

$TEN$ : A student is in the tenth grade.

$ELEVEN$ : A student is in the eleventh grade.

Which pair of events is independent?

- $D$  and  $NINE$
- $D$  and  $TEN$
- $G$  and  $TEN$
- $G$  and  $ELEVEN$