1. Billy Bob plays soccer at Southwestern Oregon Community College. He makes a goal 56% the time he shoots.

Billy Bob is going to attempt two goals in a row in the next game.

A = the event Billy Bob is successful on his first attempt. $P(A) = 0.56$.

B = the event Billy Bob is successful on his second attempt. $P(B) = 0.56$.

Billy Bob tends to shoot in streaks. The probability that he makes the second goal GIVEN that he made the first goal is 0.68.

What is the probability that he makes both goals?

A. The probability that Billy Bob makes both goals is 0.4708.

B. The probability that Billy Bob makes both goals is 0.3708.

C. The probability that Billy Bob makes both goals is 0.3608.

D. The probability that Billy Bob makes both goals is 0.3508.

E. The probability that Billy Bob makes both goals is 0.3108.

F. The probability that Billy Bob makes both goals is 0.3808.

G. The probability that Billy Bob makes both goals is 0.4608.

H. The probability that Billy Bob makes both goals is 0.4008.

2. Roll two fair dice. What is the probability of rolling no sixes?

A. The probability of rolling no sixes is 1.

B. The probability of rolling no sixes is 0.

C. The probability of rolling no sixes is $\frac{1}{6}$.

D. The probability of rolling no sixes is $\frac{11}{36}$.

E. The probability of rolling no sixes is $\frac{25}{36}$.

F. The probability of rolling no sixes is $\frac{5}{6}$.

3. Draw two cards from a well-shuffled, 52-card deck **with replacement**. What is the probability of drawing at least one ace? (Hint: think complementary events.)

A. The probability of drawing at least one ace is $\frac{1}{17}$.

B. The probability of drawing at least one ace is $\frac{144}{169}$.

C. The probability of drawing at least one ace is $\frac{12}{13}$.

D. The probability of drawing at least one ace is $\frac{1}{221}$.

E. The probability of drawing at least one ace is $\frac{1}{169}$.

F. The probability of drawing at least one ace is 0.

G. The probability of drawing at least one ace is $\frac{1}{16}$.

H. The probability of drawing at least one ace is $\frac{25}{169}$.

4. Suppose you shake up a can with 4 six-sided dice in it and then dump them on the table. What is the probability that none of the 4 six-sided dice will be showing a six after they settle? If necessary, round your answer to the nearest ten-thousandth. (Hint: think complementary events.)

A. The probability that none of the dice will be showing a six is 0.43175.

B. The probability that none of the dice will be showing a six is 0.48225.

C. The probability that none of the dice will be showing a six is 0.4521.

D. The probability that none of the dice will be showing a six is 0.56825.

E. The probability that none of the dice will be showing a six is 0.47354.

F. The probability that none of the dice will be showing a six is 0.5479.

G. The probability that none of the dice will be showing a six is 0.51775.

H. The probability that none of the dice will be showing a six is 0.52646.

5. Billy Bob plays soccer at Southwestern Oregon Community College. He makes a goal 63

Billy Bob is going to attempt two goals in a row in the next game.

A = the event Billy Bob is successful on his first attempt. $P(A) = 0.63$.

B = the event Billy Bob is successful on his second attempt. $P(B) = 0.63$.

Billy Bob tends to shoot in streaks. The probability that he makes the second goal GIVEN that he made the first goal is 0.78.

What is the probability that Billy Bob makes the first goal or the second goal?

A. The probability that Billy Bob makes the first or second goal is 0.8086.

B. The probability that Billy Bob makes the first or second goal is 0.7786.

C. The probability that Billy Bob makes the first or second goal is 0.7086.

D. The probability that Billy Bob makes the first or second goal is 0.7186.

E. The probability that Billy Bob makes the first or second goal is 0.6986.

F. The probability that Billy Bob makes the first or second goal is 0.7686.

G. The probability that Billy Bob makes the first or second goal is 0.8386.

H. The probability that Billy Bob makes the first or second goal is 0.6786.

6. During World War II, the British found that the probability that a bomber is lost through enemy action on a mission over occupied Europe was 0.05. The probability that the bomber returns safely from a mission was therefore 0.95. It is reasonable to assume that missions are independent. Suppose a tour of duty consists of 9 missions. What was the probability of NOT surviving all 9 missions? If necessary, round your answer to the nearest ten-thousandth.

A. The probability of NOT surviving all 9 missions was 0.6367.

B. The probability of NOT surviving all 9 missions was 0.6143.

C. The probability of NOT surviving all 9 missions was 0.6302.

D. The probability of NOT surviving all 9 missions was 0.3857.

E. The probability of NOT surviving all 9 missions was 0.3698.

F. The probability of NOT surviving all 9 missions was 0.6466.

G. The probability of NOT surviving all 9 missions was 0.3633.

H. The probability of NOT surviving all 9 missions was 0.3534.

7. Draw two cards from a well-shuffled, 52-card deck **without replacement**. What is the probability of drawing two consecutive aces?

A. The probability of drawing two consecutive aces is $\frac{1}{16}$.

B. The probability of drawing two consecutive aces is 0.

C. The probability of drawing two consecutive aces is $\frac{1}{17}$.

D. The probability of drawing two consecutive aces is $\frac{144}{169}$.

E. The probability of drawing two consecutive aces is $\frac{1}{169}$.

F. The probability of drawing two consecutive aces is $\frac{12}{13}$.

G. The probability of drawing two consecutive aces is $\frac{25}{169}$.

H. The probability of drawing two consecutive aces is $\frac{1}{221}$.

8. In a bag, there are 7 red marbles and 9 green marbles.

The red marbles are marked with the numbers 1, 2, 3, 4, 5, 6, and 7

The green marbles are marked with the numbers 1, 2, 3, 4, 5, 6, 7, 8, and 9.

R = a red marble G = a green marble E = an even-numbered marble

The sample space is $S = \{R1, R2, R3, R4, R5, R6, R7, G1, G2, G3, G4, G5, G6, G7, G8, G9\}$. S has 16 outcomes.

What is $P(E|G)$? Write your answer as a decimal rounded to four places.

A. $P(E|G) = 0.2222$.

B. $P(E|G) = 0.6667$.

C. $P(E|G) = 1$.

D. $P(E|G) = 0.1111$.

E. $P(E|G) = 0.8889$.

F. $P(E|G) = -0.1111$.

G. $P(E|G) = 0.4444$.

H. $P(E|G) = 0.3333$.