Devry University Summer 2004

Math 221: Basic Statistics Pop Quiz #1A

Week #4

Name:_____

SHOW ALL YOUR WORK FOR FULL CREDIT!

(1) If you roll 5 dice the probability of rolling a total of **16 or less** is $\frac{3108}{7776} \approx 39.97\%$. Calculate the probability of not rolling 16 or less. Supply your answer as a fraction and as a percentage accurate to the nearest tenth of a percent.

(2) How else could you state the event "not rolling 16 or less"?

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Math 221: Basic Statistics Pop Quiz #1B

Week #4

Name:_____

SHOW ALL YOUR WORK FOR FULL CREDIT!

(1) If you roll 5 dice the probability of rolling a total of **20 or less** is $\frac{6054}{7776} \approx 77.85\%$. Calculate the probability of not rolling 20 or less. Supply your answer as a fraction and as a percentage accurate to the nearest tenth of a percent.

(2) How else could you state the event "not rolling 20 or less"?

Devry University Summer 2004

Math 221: Basic Statistics Pop Quiz #1C

Week #4

Name:_____

SHOW ALL YOUR WORK FOR FULL CREDIT!

(1) If you roll 5 dice the probability of rolling a total of **18 or less** is $\frac{4668}{7776} \approx 60.03\%$. Calculate the probability of not rolling 18 or less. Supply your answer as a fraction and as a percentage accurate to the nearest tenth of a percent.

(2) How else could you state the event "not rolling 18 or less"?

Devry University Summer 2004

Math 221: Basic Statistics Pop Quiz #1 Solutions

Week #4

The probability of something **not** happening is just 1 minus the probability of it happening. So if A represents the rolling less than some value, $P(A)$ is its probability, we have for each version

$$\begin{aligned} P(A) &= \frac{3108}{7776} = 39.97\% \\ P(\overline{A}) &= 1 - \frac{3108}{7776} = \frac{4668}{7776} \\ &= 1 - 39.97\% = 60.03\% \end{aligned}$$

Another way to say "not rolling 16 or less" is to say "rolling more than 16" or "rolling at least "17."

$$\begin{aligned} P(A) &= \frac{6054}{7776} = 77.85\% \\ P(\overline{A}) &= 1 - \frac{6054}{7776} = \frac{1722}{7776} \\ &= 1 - 77.85\% = 22.15\% \end{aligned}$$

Another way to say "not rolling 20 or less" is to say "rolling more than 20" or "rolling at least "21."

$$\begin{aligned} P(A) &= \frac{4668}{7776} = 60.03\% \\ P(\overline{A}) &= 1 - \frac{4668}{7776} = \frac{3108}{7776} \\ &= 1 - 60.03\% = 39.97\% \end{aligned}$$

Another way to say "not rolling 18 or less" is to say "rolling more than 18" or "rolling at least "19."