

Quiz 17

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This quiz does not count towards your grade. It exists to simply gauge your understanding. Treat this as though it were a portion of your midterm or final exam. "Intuition Practice" might be tricky; watch out for subtleties. "Proofs" will be challenging to start; develop an arsenal of *approaches* to starting a problem.

1 Intuition Practice

In this problem, consider three random variables X , Y , and Z , where X is the outcome of a dice roll, Y is the outcome of another dice roll, and $Z = X + Y$ (Z be the sum of the two dice roll outcomes).

For each question, circle "True" or "False," and provide a brief justification.

1. (True or False) $E[Z] = 7$
2. (True or False) $E[X^2] = \frac{91}{6}$
3. (True or False) $E[Z^2] < 49$