Introduction to Random Variables and Probability Distributions Quiz

1. Let random variable U represent the field goal percentage (percentage of shots made) for players in a basketball league. The following table shows the probability distribution of the random variable U.

Field Goal Percentage	Probability
0.3	0.10
0.4	0.45
0.5	0.30
0.6	0.10
0.7	0.05

Fatima claims that the distribution of U is uniform with a median of 0.4 field goal percentage. Is Fatima's claim supported by the table?

(A) Yes, the distribution is uniform with a median of 0.4 field goal percentage.

(B) No, the distribution is uniform with a median of 0.5 field goal percentage.

(C) No, the distribution is skewed to the right with a median of 0.4 field goal percentage.

(D) No, the distribution is skewed to the right with a median of 0.5 field goal percentage.

(E) No, the distribution is skewed to the left with a median of 0.4 field goal percentage.

2. Let random variable Y represent the number of interviews conducted for job openings at a certain company. The following table shows the cumulative probability distribution of the discrete random variable Y.

y	$P(Y \leq y)$
5	0
6	0.2
7	0.4
8	0.6
9	0.8
10	1.0

Khaleed claims that the distribution of Y is skewed to the left with mean equal to 8 interviews. Is Khaleed's claim correct?

(A) Yes, the distribution is skewed to the left with mean equal to 8 interviews.

(B) No, the distribution is skewed to the left with mean greater than 8 interviews.

(C) No, the distribution is skewed to the right with mean equal to 8 interviews.

(D) No, the distribution is uniform with mean equal to 8 interviews.

(E) No, the distribution is uniform with mean greater than 8 interviews.

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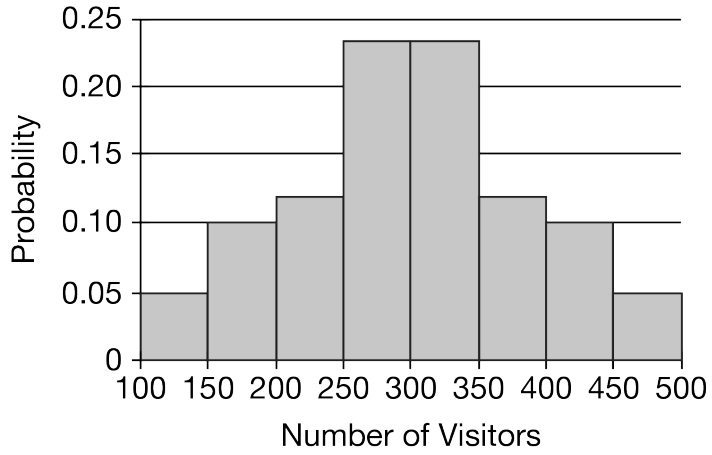
3. Let random variable R represent the the number of visitors to a certain museum during a given day. The following table shows the probability distribution of the random variable.



Which of the following claims about the distribution of random variable R is best supported by the histogram?

(A) The most likely number of visitors to the museum on a given day is between 450 and 500.

(B) The mean number of visitors to the museum is much less than the median number of visitors.

(C) The mean number of visitors to the museum is much greater than the median number of visitors.

(D) On a given day, the number of visitors from 100 through 500 will occur with equal probabilities.

(E) On a given day, it is equally likely for the museum to have less than 300 visitors as it is to have more than 300 visitors.