

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 .

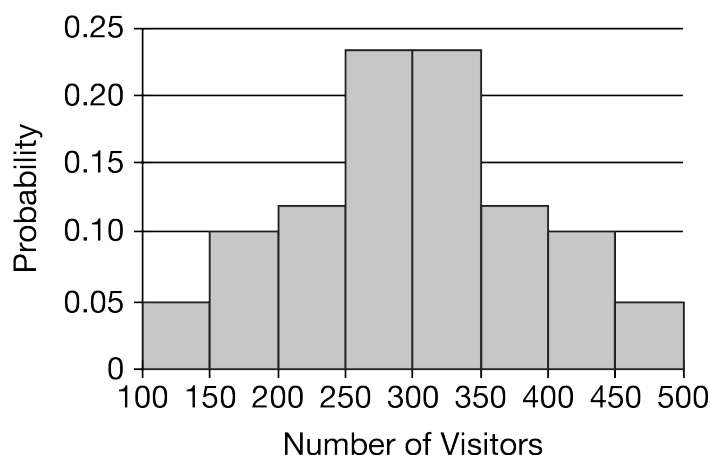
y	$P(Y \leq y)$
5	0
6	0.2
7	0.4
8	0.6
9	0.8
10	1.0

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.