1. Sleazy P. Martini has a crooked, six-sided die.

Let X = the number on the face of the die

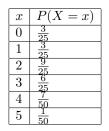
Let P(X = x) = the probability of rolling x.

Use the table below to answer the following question.

x	P(X=x)
1	0.1867
2	0.1367
3	0.2267
4	0.1067
5	0.1967
6	0.1467

What is the long-term average of the rolled face value of Sleazy P.'s die? Round your answer to four decimal places.

A. $\mu = 3.43$. B. $\mu = 3.45$. C. $\mu = 3.38$. D. $\mu = 3.44$. E. $\mu = 3.46$. F. $\mu = 3.4$. G. $\mu = 3.41$. H. $\mu = 3.39$. 2. A hospital researcher is interested in the number of times the average post-op patient will ring the nurse during a 12-hour shift. For a random sample of 50 patients, the following information was obtained.



where X = the number of times a patient rings the nurse during a 12-hour shift.

For this exercise, x = 0, 1, 2, 3, 4, 5.

P(X = x) = the probability that X takes on value x.

Use the above PDF table to find the expected value μ of this distribution. Round your answer to two decimal places.

A. $\mu = 2.27$.

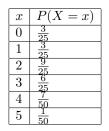
B. $\mu = 2.26$.

C. $\mu = 2.25$.

D. $\mu = 2.17$.

- E. $\mu = 2.18$.
- F. $\mu = 2.22$.
- G. $\mu = 2.23$.
- H. $\mu=2.21.$

3. A hospital researcher is interested in the number of times the average post-op patient will ring the nurse during a 12-hour shift. For a random sample of 50 patients, the following information was obtained.



where X = the number of times a patient rings the nurse during a 12-hour shift.

For this exercise, x = 0, 1, 2, 3, 4, 5.

P(X = x) = the probability that X takes on value x.

What is the long-term average of the number of calls a patient makes on a 12-hour shift? Round your answer to two decimal places.

- A. During a 12-hour shift, a patient rings 2.17 times on average.
- B. During a 12-hour shift, a patient rings 2.25 times on average.
- C. During a 12-hour shift, a patient rings 2.27 times on average.
- D. During a 12-hour shift, a patient rings 2.19 times on average.

E. During a 12-hour shift, a patient rings 2.23 times on average.

F. During a 12-hour shift, a patient rings 2.18 times on average.

G. During a 12-hour shift, a patient rings 2.22 times on average.

H. During a 12-hour shift, a patient rings 2.21 times on average.

4. Linda Lou offers Billy Bob to play a game which involves selecting a card from a regular 52-card deck and tossing a coin. The coin is a fair coin and is equally likely to land on heads or tails.

If the card is a face card, and the coin lands on Heads, Billy Bob wins \$7

If the card is a face card, and the coin lands on Tails, Billy Bob wins \$3

If the card is not a face card, Billy Bob loses \$3, no matter what the coin shows.

If Billy Bob were to play this game repeatedly, what is the long-term average of Billy Bob's winnings? Round your answer to the nearest cent.

A. The long term average of Billy Bob's winnings is -\$1.25.

B. The long term average of Billy Bob's winnings is -\$1.55.

C. The long term average of Billy Bob's winnings is -\$1.15.

D. The long term average of Billy Bob's winnings is -\$0.75.

E. The long term average of Billy Bob's winnings is -\$1.65.

F. The long term average of Billy Bob's winnings is -\$0.95.

G. The long term average of Billy Bob's winnings is -\$0.85.

H. The long term average of Billy Bob's winnings is -\$1.45.

5. Sleazy P. Martini has a crooked, six-sided die.

Let X = the number on the face of the die

Let P(X = x) = the probability of rolling x.

x	P(X=x)
1	0.1767
2	0.2167
3	0.2567
4	0.0767
5	0.1167
6	0.1567

The expected value of the PDF described by the above table is $\mu = 3.21$. Use the table to find the standard deviation σ of of Sleazy P.'s die. Round your answer to four decimal places.

- A. $\sigma = 1.6932$.
- B. $\sigma = 1.6332$.
- C. $\sigma = 1.6732.$
- D. $\sigma = 1.7332.$
- E. $\sigma = 1.6432$.
- F. $\sigma = 1.7132$.
- G. $\sigma = 1.6532$.
- H. $\sigma=1.6832.$

6. A random variable X has a PDF described by the following table.

x	P(X=x)
0	0.11
3	0.44
6	0.36
9	0.09

Find the expected value μ of this distribution. Round your answer to two decimal places.

A. $\mu = 4.28$. B. $\mu = 4.32$. C. $\mu = 4.31$. D. $\mu = 4.34$. E. $\mu = 4.25$. F. $\mu = 4.29$. G. $\mu = 4.26$. H. $\mu = 4.24$. 7. Suppose Sleazy P. Martini has an unfair coin with P(Heads) = 0.58 and P(Tails) = 0.42 and offers you to play the following game:

If the coin comes up heads, you pay Sleazy P. \$6.

If it comes up tails, Sleazy P. pays you \$10.

On the average, is this a game you want to play?

A. Yes. You want to play this game.

B. No. You don't want to play this game.

8. A company wants to evaluate its attrition rate, in other words, how long new hires stay with the company. Over the years, they have established the following probability distribution.

Let X = the number of years a new hire will stay with the company.

Let P(X = x) = the probability that a new hire will stay with the company x years.

Use the table below to answer the following question.

x	P(X=x)
0	0.24
1	0.18
2	0.01
3	0.05
4	0.27
5	0.21
6	0.04

The expected value of the PDF described by the above table is $\mu = 2.72$. Use this table to find the standard deviation σ of this distribution. Round your answer to two decimal places.

A. $\sigma = 2.07$.

B. $\sigma = 2.11$.

C. $\sigma = 2.09$.

- D. $\sigma = 2.08$.
- E. $\sigma = 2.06$.
- F. $\sigma = 2.03$.
- G. $\sigma = 2.02$.

H. $\sigma = 2.04$.