Evaluation due May 9, 2021 11:32 +03

Evaluation 7 Problem 1

1/1 point (graded)

Suppose you play a game in which you are dealt one card from a standard deck of 52 cards; you win $\$10$ if the card is an ace, and lose $\$1$ otherwise.

What is the approximate variance of this game? *Choose the best answer.*

- ○ ≈ 18.76
- ◉ ≈ 8.59
- ○ ≈ 3.46
- ○ ≈ 1.07

✔

Submit

You have used 1 of 2 attempts

✔ Correct (1/1 point)

Evaluation 7 Problem 2

1/1 point (graded)

Suppose you play a game in which you roll one die, and the payoff is the number of dots showing.

What is the variance of this game? *Choose the best answer.*

- ○ $\frac{3}{4}$
- ○ $\frac{19}{3}$

- ○ $\frac{35}{24}$
- ◉ $\frac{35}{12}$

✔

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✔ Correct (1/1 point)

Evaluation 7 Problem 3

1/1 point (graded)

Now suppose that you play a game in which you roll 100 dice, and the payoff is the total number of dots showing on all the dice.

What is the variance of this game? *Choose the best answer.*

- ◉ $\frac{875}{3}$
- ○ $\frac{175}{6}$
- ○ $\frac{875}{6}$
- ○ $\frac{7}{24}$

✔

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✔ Correct (1/1 point)

Evaluation 7 Problem 4

1/1 point (graded)

Next, suppose you play a game G in which you roll 100 dice, and the payoff is the number of dice that come up "6."

What is the variance of this game? *Choose the best answer.*

- $\frac{3,000}{72}$
- $\frac{1,000}{36}$
- $\frac{500}{36}$ ✔
- $\frac{100}{36}$

Submit

You have used 1 of 2 attempts

✔ Correct (1/1 point)

Evaluation 7 Problem 5

1/1 point (graded)

Again, suppose you play a game G in which you roll 100 dice, and the payoff is the number of dice that come up "6."

What is the normalized form of the game G? *Choose the best answer.*

- $\frac{G-\frac{100}{6}}{\sqrt{\frac{1,000}{36}}}$

- [x] $\frac{G-\frac{100}{6}}{\sqrt{\frac{500}{36}}}$
- [ ] $\frac{G-50}{\sqrt{\frac{3,000}{72}}}$
- [ ] $\frac{G-10}{\sqrt{\frac{500}{36}}}$

✔

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✔ Correct (1/1 point)

Evaluation 7 Problem 6

1/1 point (graded)

Let G be the game in which you flip an unfair coin, one that comes up heads on average 60% of the time and tails 40% of the time. The payoff is 1 if the coin comes up heads and 0 if it is tails.

What is the normalized form of the game $G\,(100)$? *Choose the best answer.*

- [ ] $\frac{G(100)-100}{\sqrt{24}}$
- [ ] $\frac{G(100)-60}{24}$
- [ ] $\frac{G(100)-60}{\sqrt{240}}$
- [x] $\frac{G(100)-60}{\sqrt{24}}$

✔

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✔ Correct (1/1 point)

NOTE: To complete the following evaluation problems, you will need to use a table like the one featured in Lessons 7.4 and 7.5. The tables are offered in two forms: the exact version used in the lesson and a larger-print version.

- Tables of the Normal Distribution (Version Used in Lessons and Office Hours)
- Tables of the Normal Distribution (Larger-Print Version)

Evaluation 7 Problem 7

1/1 point (graded)

Nathan and Carl are running for the mayor of Middletown, in which 60% of the voters favor Nathan and 40% support Carl. A poll is conducted in which 100 residents, selected at random, are asked their preference.

What is the likelihood that the poll will show a majority in favor of Carl? *Choose the best answer.*

- ○ ≈ 0.3409
- ○ ≈ 0.0068
- ◉ ≈ 0.0207
- ○ ≈ 0.1976

✔

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✔ Correct (1/1 point)

Evaluation 7 Problem 8

1/1 point (graded)

Suppose you roll 100 dice. What are the odds that 25 or more of them come up "6"? *Choose the best answer.*

- ○ ≈ 0.2143
- ◉ ≈ 0.0125
- ○ ≈ 0.0357
- ○ ≈ 0.0408

✔

Submit

You have used 1 of 2 attempts

✔ Correct (1/1 point)