| <ol> <li>If you randomly guess on this question, you have a .25 probability of being correct. Which probabilistic paradigm<br/>from Lesson 1 does this argument best demonstrate?</li> </ol>  | 1 ponto |      |
|---|---------|------|
| Classical   |         |      |
| O Frequentist   |         |      |
| Bayesian  |         |      |
| None of the above   |         |      |
|   |         |      |
| 2. On a multiple choice test, you do not know the answer to a question with three alternatives. One of the options, however, contains a keyword which the professor used disproportionately often during lecture. Rather than randomly guessing, you select the option containing the keyword, supposing you have a better than 1/3 chance of | 1 ponto |      |
| being correct.  |         |      |
| Which probabilistic paradigm from Lesson $f 1$ does this argument best demonstrate?   |         |      |
| Classical   |         |      |
| Frequentist   |         |      |
| Bayesian  |         |      |
| 3. On average, one in three students at your school participates in extracurricular activities. You conclude that the probability that a randomly selected student from your school participates is 1/3.  | 1 ponto |      |
| Which probabilistic paradigm from Lesson 1 does this argument best demonstrate?   |         |      |
|   |         |      |
| Classical   |         |      |
| Frequentist   | _       |      |
| ○ Bayesian  |         |      |
| 4. For Questions 4-6, consider the following scenario:  | 1 ponto |      |
| Your friend offers a bet that she can beat you in a game of chess. If you win, she owes you \$5, but if she wins, you   |         |      |
| owe her \$3.  |         |      |
| <ul> <li>Suppose she is 100% confident that she will beat you. What is her expected return for this game? (Report your answer without the \$ symbol.)</li> </ul>  |         |      |
|   |         |      |
| Digite sua resposta aqui  |         |      |
|   |         |      |
| you win = \$5 / SHE WIN = $+4$<br>- Essen & a visas dela de gent<br>$E(x) = (-5), (0/) + 3 \cdot (1) = 3$   | 3       |      |
| - Esser & a visas dela de gost  | los/ox  | rect |
| $E(x) = (-5), (0/) + 3 \cdot (1) = 3$   |         |      |
|   |         |      |
|   |         |      |
|   |         |      |

| _  | Chess  |
|----|--------|
| э. | Cliess |

1 ponto

• Suppose she is only 50% confident that she will beat you (her personal probability of winning is p=0.5). What is her expected return now? (Report your answer without the \$ symbol.)

Digite sua resposta aqui



## E(x) = -5.(0,5) + 3.(0,5) = (-1)

6. Chess:

1 ponto

Now assuming your friend will only agree to fair bets (expected return of \$0), find her personal probability
that she will win. Report your answer as a simplified fraction.

Hint: Use the expected return of her proposed bet.

A pré-visualização aparecerá aqui...

Insira a expressão matemática aqui

3/8

$$-5.9+3(1-9)=0$$

$$-5.9+3-39=0$$

$$89=3$$

P=3/8

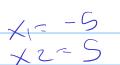
7. For Questions 7-8, consider the following "Dutch book" scenario:

1 ponto

Suppose your friend offers a pair of bets:

- (i) if it rains or is overcast tomorrow, you pay him \$4, otherwise he pays you \$6;
- (ii) if it is sunny you pay him \$5, otherwise he pays you \$5.
  - Suppose rain, overcast, and sunny are the only events in consideration. If you make both bets simultaneously, this is called a "Dutch book," as you are guaranteed to win money. How much do you win regardless of the outcome? (Report your answer without the \$ symbol.)

Digite sua resposta aqui



RAIN

 $(2/3)(-4) + (1/3) \cdot (6 + 1/3) \cdot (-5) + (2/3) = 5$  - 6/3 + 2 - 5/3 + 10/3 = + 2/3 + 2 - 5/3

