

Table Number: \_\_\_\_\_

Group Name: \_\_\_\_\_

Group Members: \_\_\_\_\_

## Expected Value/Mean of a Probability Distribution Practice Set

- Recall that a roulette wheel has 38 slots. Eighteen are red, 18 are black, and 2 are green. You can bet on 6 different numbers. If any of them comes up, you receive \$6 back for each \$1 bet. What is the expected loss on a \$1 bet? Please round the answer to two decimal places.
  - \$0.01
  - \$0.08
  - \$0.07
  - \$0.05
  - \$0.04
- In a gambling game, you receive a payoff of \$82 if you roll a sum of 4, and \$7 if you roll a sum of 7 on two dice. Otherwise, you receive no payoff. What is the average payoff per play?
  - \$8
  - \$9
  - \$6
  - \$12
  - \$5
- In a carnival game, you roll 2 dice. If the sum is 5, you receive a \$6 payoff. If the sum is 10, you receive a \$13 payoff. What is the expected payoff?
  - \$2.05
  - \$1.35
  - \$1.75
  - \$1.55
  - \$1.85
- In a gambling game, you pick 1 card from a standard deck. If you pick an ace, you win \$10. If you pick a picture card (J, Q, or K), you win \$5. Otherwise, you win nothing. How much should a carnival booth charge you to play this game if they want an average profit of \$0.60 per game? (hint: first find the average payout)
  - \$2.12
  - \$2.62
  - \$2.72
  - \$2.22
  - \$2.52

## Numeric Response

5. You have a job working for a mathematician. She pays you each day according to what card you select from a bag. Two of the cards say \$220, five of them say \$100, and three of them say \$50. What is your expected (average) daily pay?

\$ \_\_\_\_\_ per day

6. An apartment complex has 20 air conditioners. Each summer, a certain number of them have to be replaced.

Number of Air Conditioners Replaced	Probability
0	0.21
1	0.37
2	0.13
3	0.11
4	0.11
5	0.07

What is the expected number of air conditioners that will be replaced in the summer?

7. In a gambling game, you receive a payoff of \$46 if you roll a sum of 10, and \$7 if you roll a sum of 7 on two dice. Otherwise, you receive no payoff. What is the average payoff per play?

\$ \_\_\_\_\_