Extra Practice with Expected Value and Games of Chance

1. Suppose that you buy 1 ticket for $1 out of a lottery of 1000 tickets where the prize for the one winning ticket is to be $500. What are your expected winnings?
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2. Find the expected payback for a game in which you bet $6 on any number from 0 to 399 and if your number comes up, you get $1000.
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3. A raffle offers a first prize of $1000, 2 second prizes of $300 and 20 third prizes of $10 each. If 15000 tickets are sold at 75¢ each, find the expected winnings (IN CENTS) for a person buying 1 ticket.
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4. One option in a roulette game is to bet $2 on red. (There are 18 red compartments, 18 black compartments and two compartments that are neither black nor red.) If the ball lands on red, you get to keep the $2 you paid to play the game and you are awarded $2. If the ball lands elsewhere, you are awarded nothing and the $2 bet is collected. Find the expected payback for this game if you bet $2 on red.
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5. Suppose that you buy 1 ticket for $6 out of a lottery of 1000 tickets where the prize for the one winning ticket is to be $800. What are your expected winnings?
6. Find the expected payback for a game in which you bet $8 on any number from 0 to 999 and if your number comes up, you get $2000.
7. A raffle offers a first prize of $1000, 2 second prizes of $300 and 20 third prizes of $10 each. If 8000 tickets are sold at 50¢ each, find the expected winnings (IN CENTS) for a person buying 1 ticket.
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8. One option in a roulette game is to bet $4 on red. (There are 18 red compartments, 18 black compartments and two compartments that are neither black nor red.) If the ball lands on red, you get to keep the $4 you paid to play the game and you are awarded $4. If the ball lands elsewhere, you are awarded nothing and the $4 bet is collected. Find the expected payback for this game if you bet $4 on red.
9. Suppose that you buy 1 ticket for $2 out of a lottery of 500 tickets where the prize for the one winning ticket is to be $600. What are your expected winnings?
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10. Find the expected payback for a game in which you bet $8 on any number from 0 to 99 and if your number comes up, you get $2000.
11. A raffle offers a first prize of $2000, 2 second prizes of $200 and 10 third prizes of $20 each. If 10000 tickets are sold at 25¢ each, find the expected winnings (IN CENTS) for a person buying 1 ticket.
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12. One option in a roulette game is to bet $6 on red. (There are 18 red compartments, 18 black compartments and two compartments that are neither black nor red.) If the ball lands on red, you get to keep the $6 you paid to play the game and you are awarded $6. If the ball lands elsewhere, you are awarded nothing and the $6 bet is collected. Find the expected payback for this game if you bet $6 on red.