Date_

Determine whether the scenario involves independent or dependent events. Then find the probability.

- 1) You roll a fair six-sided die six times. The die shows an even number the first three time and an odd number the remaining three times.
- A cooler contains twelve bottles of sports drink: three lemon-lime flavored, four orange flavored, and five fruit-punch flavored. Three times, you randomly grab a bottle, return the bottle to the cooler, and then mix up the bottles. All three times you get a lemon-lime drink.

- A basket contains five apples, four peaches, and three pears. You randomly select and eat three pieces of fruit. The first piece of fruit is an apple and the next two pieces are peaches.
- 4) You flip a coin four times and then roll a fair six-sided die four times. The coin lands tails-up every time and the die shows an odd number every time.

- 5) A box of chocolates contains three milk chocolates, five dark chocolates, and four white chocolates. You randomly select and eat three chocolates. The first piece is milk chocolate, the second is white chocolate, and the third is milk chocolate.
- 6) A basket contains six apples and four peaches. Three times, you randomly select a piece of fruit, return it to the basket, and then mix the fruit. The first time, you get an apple. Then second and third times, you get peaches.

- 7) A box of chocolates contains four milk chocolates, four dark chocolates, and three white chocolates. You randomly select and eat three chocolates. The first piece is milk chocolate, the second is white chocolate, and the third is milk chocolate.
- A cooler contains twelve bottles of sports drink: four lemon-lime flavored, four orange flavored, and four fruit-punch flavored. Three times, you randomly grab a bottle, return the bottle to the cooler, and then mix up the bottles. All three times you get a lemon-lime drink.

- 9) A cooler contains ten bottles of sports drink: three lemon-lime flavored, three orange flavored, and four fruit-punch flavored. You randomly grab a bottle for your coach, a bottle for your friend, and a bottle for yourself. Your coach gets a lemon-lime, your friend gets an orange, and you get a fruit-punch.
- 10) You flip a coin five times and then roll a fair six-sided die four times. The coin lands heads-up every time and the die shows an even number every time.

- 11) You flip a coin three times and then roll a fair six-sided die once. The coin lands heads-up every time and the die shows a one.
- 12) There are five nickels, five dimes, and five quarters in your pocket. You randomly pick three coins and place them on a counter. The first two coins are a dimes, and the third is a quarter.

2.

Answers to

1) Independent; $\frac{1}{64} \approx 0.016$ 2) Independent; $\frac{1}{64} \approx 0.016$ 3) Dependent; $\frac{1}{22} \approx 0.045$ 4) Independent; $\frac{1}{256} \approx 0.004$ 5) Dependent; $\frac{1}{55} \approx 0.018$ 6) Independent; $\frac{12}{125} = 0.096$ 7) Dependent; $\frac{2}{55} \approx 0.036$ 8) Independent; $\frac{1}{27} \approx 0.037$ 9) Dependent; $\frac{1}{20} = 0.05$ 10) Independent; $\frac{1}{512} \approx 0.002$ 11) Independent; $\frac{1}{48} \approx 0.021$ 12) Dependent; $\frac{10}{273} \approx 0.037$

