Introductory Statistics Section 2.6 Name:_____

Complement Rule

For 1–5, find the probability of the complement of the event E that has the given probability

1. $P(E) = \frac{3}{8}$

2. $P(E) = \frac{5}{100}$

3. $P(E) = 30\%$

4. $P(E) = 0.25$

5. $P(E) = \frac{1}{2}$

For 6–10, find the probability of the complement of the event described.

6. A number greater than or equal to 4 appears on the up face in a single toss of a fair die.

7. An even number appears on the up face in a single toss of a fair die.

8. A heads appears on the up face in a single toss of a fair coin.

9. At least one head appears when two fair coins are flipped and the up face on each is observed.

10. The number of dots on the up faces sum to 7 when a pair of fair dice is tossed and the up face on each is observed.

For 11–15, use the definition of the complement of an event to find the given probability.

11. Find the probability of not drawing a face card when a single card is drawn at random from a well-shuffled standard deck of 52 playing cards.

12. Find the probability of not drawing a diamond when a single card is drawn at random from a well-shuffled standard deck of 52 playing cards.

13. A single marble is drawn at random from an urn containing 7 black marbles, 6 green marbles, and 10 red marbles. (Assume the marbles are identical except for color.) What is the probability that the marble drawn is not red?

14. A multiple-choice question has four possible answer choices (A, B, C, or D), one of which is correct. Suppose that an unprepared student does not read the question, but simply makes a random guess for the question. What is the probability that the student will guess incorrectly?

15. A box contains 30 identical-looking items of which 3 are defective. If one item is selected at random, what is the probability that the item is not defective?