Section 2.7 Addition Rule for Probability

State whether the given events are mutually exclusive and explain your reasoning.

- 1. Drawing a red card and drawing a jack on one draw from a standard deck of 52 playing cards.
- 2. Rolling a 3 and rolling a number greater than 4 on one toss of a fair die.
- 3. Drawing a red marble and drawing a green marble in one draw from a bag containing 7 black marbles, 6 green marbles, and 10 red marbles.
- 4. Rolling an odd number and rolling a number less than 3 on one roll of a fair die.

Use the following formula to calculate the following: P(A or B) = P(A) + P(B) - P(A and B). Determine if the events are mutually exclusive. 5. P(A) = 0.5, P(B) = 0.3, P(A and B) = 0.06 | 6. P(A) = 0.4, P(B) = 0.1, P(A and B) = 0.05

7.
$$P(A) = \frac{4}{52}, P(B) = \frac{13}{52}, P(A \text{ and } B) = \frac{1}{52}$$

8. $P(A) = \frac{3}{8}, P(B) = \frac{5}{8}, P(A \text{ and } B) = 0$

Section 2.7 Addition Rule for Probability Name:_____

Find the indicated probability.

9. What is the probability of rolling an odd number or a number less than 3 on one roll of a fair die?

10. One card is randomly drawn from a well-shuffled standard deck of 52 playing cards. Find the probability that the card drawn is an ace or either a spade or a diamond.

11. Three fair coins are flipped and the up face on each is observed. Find the probability that at least two heads are observed or the number of heads observed is an odd number.

12. Find the probability of drawing a red marble or a green marble when 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.)