Probability Worksheet #4
September 28, 2018
2 Points

Circle one name.

Name: _____ **Name:** _____ **Name:** _____

1. A special deck of cards has five suits (red, yellow, green, black, purple), each with ranks 1 through 9.

    (a) How many cards are in this deck?

    (b) Suppose we draw a card at random. Let R be the event that the card is red. Let E be the event that the card we draw has rank 8. Find the following probabilities (leave your answer as fractions; no need to simplify). Also, express these using the appropriate probability notation.

        i. The probability the card is red:

        ii. The probability the card is not an 8:

        iii. The probability the card is a red 8:

        iv. The probability that the card is either red or an 8 (or both):

        v. The probability that the card is a non-red 8:

        vi. The probability that the card is either red or is not an 8 (or both).

2. A number is chosen at random from the interval $[2, 15]$, with all numbers being equally likely. For each of the following combinations of intervals, determine the probability that the chosen number is in the indicated set.

   (a) $[4, 10] \cup [8, 12]$

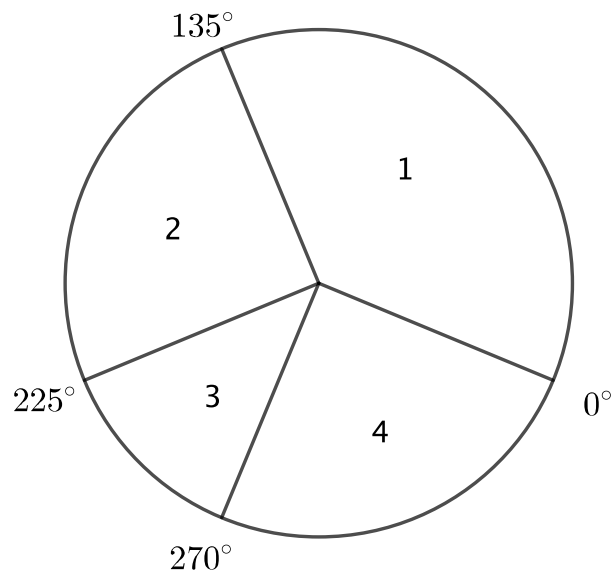   (b) $[4, 10] \cap [8, 12]$

   (c) $[4, 8] \cup [2, 12]$

   (d) $[4, 8] \cap [2, 12]$

   (e) $[4, 8] \cap [10, 12]$

   (f) $[4, 8] \cup [10, 12]$

3. Pictured here is an unusual spinner for a game.

   Assuming all positions are equally likely, what is the probability that your spin will land on

   (a) 3?

   (b) An even number?