Name _____ Date _____

Challenge

Probability at Play

In this game, you toss rings onto colored pegs. Each time you toss a ring, it will land on one of the pegs. The probability that a ring will land on a peg is 1. The chart below shows the number of pegs of each color.

Peg Color	White	Pink	Red	Orange	Yellow	Green	Blue	Purple	Black
Number of Pegs	30	50	2	14	10	20	4	40	30
Probability for One Ring									

1. Calculate the probability of a ring landing on each color. Express each probability as a percent in the table.

2. Suppose you were in charge of this game at a carnival. You have 9 prizes valued from $1 to $9. Each peg color has a different prize. How would you decide which color gets the $1 prize? the $9 prize? Explain your answer.

3. If you could pick a color and then win a prize if another player's ring landed on that color, which color would you pick? Why?

4. **Extend It** How could you change the ring toss game to make it more likely that someone will get the $9 prize? less likely?

6-12

Name _____ Date _____

Challenge

Probability at Play

In this game, you toss rings onto colored pegs. Each time you toss a ring, it will land on one of the pegs. The probability that a ring will land on a peg is 1. The chart below shows the number of pegs of each color.

Peg Color	White	Pink	Red	Orange	Yellow	Green	Blue	Purple	Black
Number of Pegs	30	50	2	14	10	20	4	40	30
Probability for One Ring	15%	25%	1%	7%	5%	10%	2%	20%	15%

1. Calculate the probability of a ring landing on each color. Express each probability as a percent in the table.

2. Suppose you were in charge of this game at a carnival. You have 9 prizes valued from $1 to $9. Each peg color has a different prize. How would you decide which color gets the $1 prize? the $9 prize? Explain your answer.

   Sample answer: The red peg should be $9 since it's the least likely and the pink should get $1 since it's the most likely. I would determine the other prizes from least to greatest.

3. If you could pick a color and then win a prize if another player's ring landed on that color, which color would you pick? Why?

   Sample answer: I would pick pink because it has the best chance of winning a prize.

4. **Extend It** How could you change the ring toss game to make it more likely that someone will get the $9 prize? less likely?

   Check students' answers.