

Hwk#5- Choosing Marbles (Inv. 2.2)

1. A bag contains two white blocks, one red block and three purple blocks. You choose one block from the bag.

- a. Find each probability.

$$P(\text{white}) =$$

$$P(\text{red}) =$$

$$P(\text{purple}) =$$

- b. What is the probability of **NOT** choosing a white block?

- c. Suppose the number of blocks of each color is doubled. What happens to the probability of choosing each color?

- d. Suppose you add two more blocks of each color to the ORIGINAL bag. What happens to the probability of choosing each color?

- e. How many blocks of which colors should you add to the **original** bag to make the probability of choosing a red block equal to $\frac{1}{2}$?

2. A bag contains several marbles. Some are red, some are white, and some are blue. You count the marbles and find the theoretical probability of choosing red marble is $\frac{1}{5}$. You also find the theoretical probability of choosing a white marble is $\frac{3}{10}$.

$$P(\text{red}) = \frac{1}{5}$$

$$P(\text{white}) = \frac{3}{10}$$

$$P(\text{blue}) =$$

- a. What is the least number of marbles that can be in the bag?

 - b. Can the bag contain 60 marbles? If so, how many of each color does it contain?

 - c. How can you find the probability of choosing a blue marble?
3. Decide whether each statement is true or false. Justify your answers.
- a. The probability of an outcome can be 0.

 - b. The probability of an outcome can be 1.

 - c. The probability of an outcome can be greater than 1.