Warm Up Quiz Tomorrow 1/23/23

There are 16 marbles in a bag. 5 are red, 8 are green, and 3 are blue.

1. You pick a marble with replacement (put it back in the bag). What is the probability you pick a red then a green?

2. You pick a marble without replacement (**don't** put it back in the bag). What is the probability you pick a red then a green?

How are these two problems different?

22.1 Conditional Probability

The conditional probability of A **given** B (that is, the probability that event A occurs given that event B occurs) is as follows:

$$P(A|B) = \frac{P(A \cap B)}{P(B)}$$

This can also be written as

$$P(A|B) = \frac{n(A \cap B)}{n(B)}$$

where n is the number in the Venn diagram or two-way table

	Late	On Time	Total
Domestic Flights	**12**	**108**	**120**
International Flights	**6**	**54**	**60**
Total	**18**	**162**	**180**

Find P(flight is late|flight is domestic):

1. Find n(late ∩ domestic)
2. Find n(domestic)
3. Find $\frac{n(\text{late} \cap \text{domestic})}{n(\text{domestic})}$

Find P(flight is domesitc|flight is late)