

## Timed Expectations



**Each Team needs to connect 4 calculators to the Hub using the cables near the door.  
Log into TI Navigator and do Warm Up**

**Have Assignment out to go over**

**Volunteers needed**

## Probability Assignment #4

1. Find the probability that a number selected at random from the set of numbers 5, 6, 7, 10, 12, 14, 17, 21, 28, 30 will be divisible by 7.
2. If a coin is thrown, what is the probability that it will turn up "tails"?
3. In how many ways can seven boys be arranged in a straight line if one particular boy is to be at the beginning of the line, one particular boy is to be in the middle of the line, and one particular boy is to be at the end of the line?

4. How many integers between 10 and 100 can be formed by the digits 1, 2, 3, 4, 5 if no repetition is allowed?  
How many can be formed if repetition is allowed?

5. In how many different ways can the letters of the word number be arranged if each arrangement begins with a vowel?

6. In how many ways can you mail three letters in six letter boxes if no two are mailed in the same box?

7. Milltown has eight grocery stores and six meat markets. In how many ways can you buy a pound of hot dogs and a bag of flour?

8. Four people enter a bus in which there are six empty seats.  
In how many ways can the people be seated?

9. How many diagonals can be drawn in an octagon?

10. From a group of twelve ladies a committee of three is to be selected. In how many ways can this committee be formed with Mrs. Adams on the committee, but with Mrs. Jones excluded, if these two are part of the group of twelve?

## Mutually Exclusive Events

Probability will be the sum of the events

## Examples

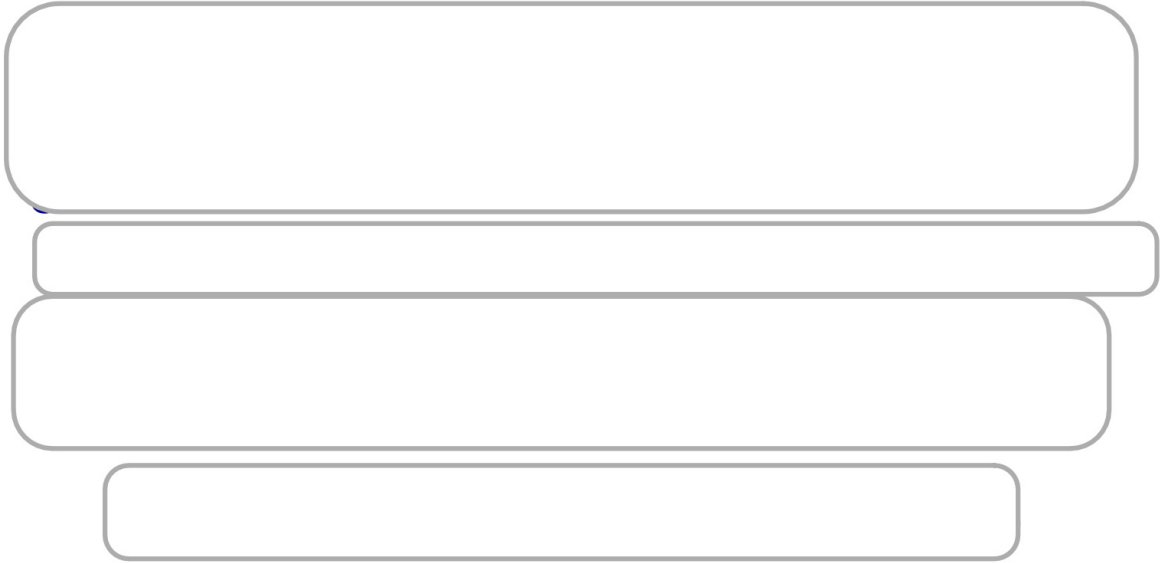
1. If a bag contains four blue marbles, six yellow marbles, and five green marbles, what is the probability that in one drawing a person will pick either a blue marble or a green marble?

2. If a die is thrown, what is the probability that either a two or a six will come up?

### Independent Events

If a die is thrown twice, what is the probability that a five will come up on the first throw, and a three will come up on the second throw?

What if the events are not mutually exclusive?

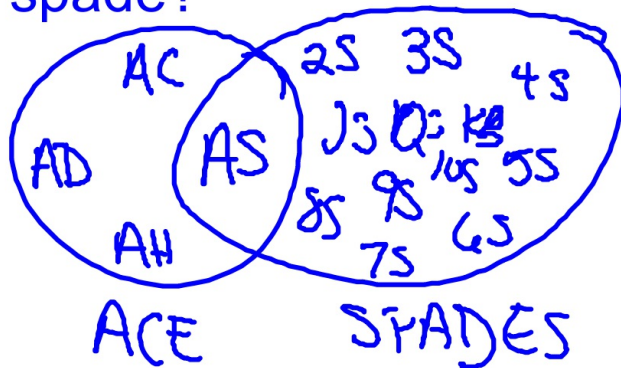


Four empty rounded rectangular boxes stacked vertically, intended for a student to write their answer to the question above.

**Assignment  
Probability Assignment #5  
(Handout)**

## Examples

1. When a card is drawn at random from a normal deck of 52 cards, what is the probability that it will be either an ace or a spade?



$$P(A \cup S) =$$

$$P(A) + P(S) - P(AS)$$

$$\frac{4}{52} + \frac{13}{52} - \frac{1}{52}$$

2. If two dice are thrown, what is the probability that one of them will come up less than five?

## Dependent Events



Consider a box that contains 7 white, 5 green, and 4 blue marbles. If 2 marbles are drawn from the box, and the first marble is not replaced before the second marble is drawn, the outcome of the first selection affects the outcome of the second drawing. What is the probability of drawing a blue marble both times?

## **Writing Assignment**

**Give 3 different examples of events, mutually exclusive, independent, and dependent. Explain why each is mutually exclusive, independent, or dependent.**