1. Suppose you roll a single die. Write out the sample space.

(a). Using the sample space, what is the probability of rolling a 1 or 5?

$P(1 \text{ or } 5) =$

NOTE: $P(1) + P(5) =$

(b). Using the sample space, what is the probability of rolling an even number?

$P(\text{even}) = P(2 \text{ or } 4 \text{ or } 6) =$

NOTE: $P(2) + P(4) + P(6) =$

2. Suppose you have a standard 52 card deck and draw 1 card. The sample space is given below:

$$\left\{\begin{array}{cccccccccccccc} AH & 2H & 3H & 4H & 5H & 6H & 7H & 8H & 9H & 10H & JH & QH & KH \\ AC & 2C & 3C & 4C & 5C & 6C & 7C & 8C & 9C & 10C & JC & QC & KC \\ AS & 2S & 3S & 4S & 5S & 6S & 7S & 8S & 9S & 10S & JS & QS & KS \\ AD & 2D & 3D & 4D & 5D & 6D & 7D & 8D & 9D & 10D & JD & QD & KD \end{array}\right\}$$

$H = \heartsuit =$ hearts
$C = \clubsuit =$ clubs
$S = \spadesuit =$ spades
$D = \diamondsuit =$ diamonds

(a). Using the sample space, what is the probability of drawing an Ace OR a Heart?

$P(\text{Ace or Heart}) =$

NOTE: $P(\text{Ace}) + P(\text{Heart}) =$

Why didn't the same formula seem to work?!?

Addition Rule for Probabilities with "OR"

3. Use the Addition Rule to calculate $P(\text{Ace or Heart}) =$

Intuitive Addition Rule for Probabilities with "OR":

Ex 30 students are surveyed about whether they ate breakfast or drank coffee in the morning. The results are below.

		Ate Breakfast? Yes	No
Drank Coffee?	Yes	4	5
	No	18	3

If one student is randomly selected, what is the probability that the student ate breakfast or drank coffee?

Intuition Rule:

Formal Rule:

Ex The table below summarizes the results of a survey of students about whether they are planning to take class in the summer.

	Freshman	Sophomore	Junior	Senior
Summer Class	22	32	29	4
No Summer Class	141	129	115	102

If one student is randomly selected, what is the probability that the student is a freshman or a sophomore or will not take a summer class?

[More notes on board.]

HW: Section 4.2, p. 155 #1, 5, 7, 9, 11, 17, 23 ⟵ IMPORTANT: Different than on the Assignment Sheet.