Worksheet 01 (Solutions)

1. We will give more formal definitions later, but for now define a probability of an event to be a number between 0 and 1 that indicates how likely an event would be to happen. For example, a value of 0 indicates that it will never happen, a value of 1 that it will always happen. This matches the way that the word 'probability' is colloquial used in a non-technical context. While in casual conversatoin most people refer to the number as a percentage or fraction, it will be good to start thinking of them as decimals. Given this, give approximate values for the probability of the following events:

(a) A randomly selected M&M will be blue.
(b) A randomly selected car in Virginia is electric.
(c) A randomly selected book starts with the word 'The'.
(d) An NBA basketball player will make a free throw.
(e) A pregnancy results in having twins.
(f) A clover will be a four-leaf clover.
(g) A letter will be lost by the U.S. postal service.
(h) Someone born in the U.S. in the year 2000 is named Taylor.

Solution: [Any reasonable answers are fine. I've included values for some of the answers that I found online, but I would not say that these are definitive.]

(a) **A randomly selected M&M will be blue.** 0.189
(b) **A randomly selected car in Virginia is electric.** 0.0027
(c) **A randomly selected book starts with the word 'The'.** ?
(d) **An NBA basketball player will make a free throw.** 0.7–0.8
(e) **A pregnancy results in having twins.** 0.0001
(f) **A clover will be a four-leaf clover.** 0.0001
(g) **A letter will be lost by the U.S. postal service.** 0.03
(h) **Someone born in the U.S. in the year 2000 is named Taylor.** 0.0003