Examples, Lecture 16, part 1.

1. Let E and F be events and recall that $P(\cdot)$ gives the probability of an event. Suppose that $P(E) = 0.5$, $P(F) = 0.6$ and $P(E \cap F) = 0.3$.

   Are the events E and F independent?

   Find $P(E \cup F)$.

2. We have six versions of homework. If four students decide to study together, what is the probability that no one has the same version?

3. Suppose that you guess on a five option multiple choice exam. What is the probability of getting the first five questions right?

   What is the probability of getting at least one of the first five questions correct?

4. Suppose that you draw two cards from a deck of cards. What is the conditional probability that the second card is red, given that the first card is a heart?

   Are the events of the first card being a heart and the second card being red independent?