

## Assignment-2

### Math 361

1. Suppose in a class of 30 students, 10 students use Twitter on a daily basis, 15 students use Facebook on a daily basis, and 8 students use both Twitter and Facebook on a daily basis. A student is randomly selected from the class. Find the probability that the selected student:

- (A) use Twitter or Facebook on a daily basis.
- (B) do not use Twitter on a daily basis.
- (C) use either Twitter on a daily basis or use Facebook on a daily basis but not both.

In this problem, define your events, and use set notation.

2. A cereal manufacturer is evaluating a new design for the box of its leading product. The people are shown the new design and the old design. Each is asked which one he or she likes better. If each person does not have a preference and simply selects one of the two designs at random, what is the probability of each of the following events?

- (A) All 10 select the new design.
- (B) More than half select the new design.

3. Find the probability of obtaining 3 heads in a sequence of 8 coin tosses.

4. A basket contains 10 balls; 3 red, 5 blue and 2 green balls. 6 balls are selected from the basket without replacement. What is the probability that the balls selected are 2 red, 3 blue, and 1 green?

(Problem 2 is from the book: Introduction to probability and its application by R. Scheaer and L. Young)