Name_____**ID** _____

Activity 5-2 (6 Sep 2018)

3. (LPV1.3.3) Prove that a nonempty set has the same number of odd subsets as even subsets. For example, consider set {1,2,3}. It has 4 odd subsets: {1},{2},{3},{1,2,3}; and 4 even subsets: {}, {1,2}, {2,3}, {1,3}. [*Hint: bijection*]

4. (LPV1.5.6) There are 20 flavors of ice cream. There are 12 children. Each child can have as many ice cream as she or he wants, but she or he cannot have more than one scoop of each flavor. It is possible that some child does not want any ice cream. In this problem, the order that a child has an ice cream does not matter, i.e., a having a scoop of chocolate and a scoop of vanilla ice cream is the same as having a scoop of vanilla and a scoop of chocolate ice cream. In how many ways can these children have ice cream?