Statistical Reasoning

6.2 – Guided Notes – Experiments: Good and Bad

Read pages 276-292. Using your textbook, define the words below:

1. Double Blind Experiment –
2. Nonadherers –
3. Completely Randomized Experiment –
4. Matched Pair Design -
5. Block Design -

**Example 1: Double Blind Experiment**

One study found that 42% of balding men maintained or increased the amount of hair on their head when they took a placebo. Compare this to the 86% of men that maintained or increased the hair on their head when given the actual drug to fight baldness.

 Should patients know whether they are getting the placebo or the acutal drug?

 Should the doctors/other medical personnel know what treatment they are giving the

patients?

**Example 2: Matched-Pair Design**

Taste Testing – Dr. Pepper vs. Mr. Pibb

**Example 3: Block Design**

1. Three therapies for a certain type of cancer are being studied for effectiveness. 500 male patients and 300 female patients are willing to serve as subjects in a clinical experiment. Create a diagram to outline a comparative randomized design.
2. Suppose that this type of cancer progresses differently in men and women. Create a diagram to outline a block design for this experiment.

**Example 4: Blocked/Matched Pair**

Android (AOSP) and Apple (IOS) are fierce competitors in the smart phone market. Researchers are curious which operating system is most user friendly. 120 subjects will be separated into 2 groups according to which operating system they currently use and then randomly assigned times simple tasks to complete on each operating system. A possible confounding variable is the order in which they complete the tasks. Design a matched pairs experiment that randomly assigns subjects to attempt IOS then AOSP and AOSP, then IOS.

**Blocks: Current cell phone (AOSP or IOS)**

**Treatments: IOS then AOSP and AOSP, then IOS**

