

Name: \_\_\_\_\_

## **Chapter 5 – Statistics: How Do We Make Meaning of Data?**

### **Scenario #1**

You are trying to decide whether to buy property in Shawnigan Lake or Sooke. You know you cannot currently afford the market in Victoria, so want to be a daily commute away. You do some research in both communities on current house sales that include 3 bedrooms, 2 bathrooms, and between half and three-quarters of an acre of property. Within the last 3 months, here are the purchase prices for homes that fit the category (prices in 'thousands'):

Shawnigan Lake: 477, 480, 503, 510, 492, 518, 507, 481, 487, 489, 489, 495, 494, 504, 499, 500, 485

Sooke: 451, 488, 513, 467, 400, 501, 470, 535, 510, 516, 496, 499, 454, 459, 410, 500, 503

How could you work with this data to glean more information in order to decide which market to focus on? So, what is relevant to investigate with this pool of data?

If you are looking for a 'high-end' home, where might you look?

If you are looking for a 'fixer-upper' home, where might you look?

If you are looking for a nice home with a consistent value neighbourhood, where might you look?

If you are looking for a possible 'screaming deal', where might you look?

## **Scenario #2**

Suppose you start a nutritional supplement business and one of your products is a Vitamin C tablet. Let's suppose this tablet is to contain 400mg of Vitamin C. As consumers, we are quick to assume that the tablet contains exactly 400mg of Vitamin C, but this is not the case due to imperfect accuracy in manufacturing. Usually, the tablet must meet requirements to be within a certain range, centred at 400mg.

You buy some manufacturing machinery and set it up to make a 400mg tablet. You run a test and produce 32 tablets. They have the following Vitamin C masses (in mg):

410, 395, 402, 405, 393, 425, 380, 400, 391, 408, 391, 431, 415, 372, 389, 399, 403, 401, 391, 408, 393, 381, 422, 411, 406, 400, 398, 392, 409, 421, 377, 397

How could you work with this data to start to figure out if it is acceptable to go to market, or if your manufacturing process must first be improved?

What is relevant to investigate with this pool of data?

After some research you find that the dosage in a tablet must be between 95-105% of the reported mass (in this case, the reported mass is 400mg). Do your test results conform to this?