Honors Statistics Name_____
7-2: Basics of Hypothesis Testing Period_____Date_____

Type I error: if the null hypothesis is rejected when it is actually true
Type II error: if the null hypothesis is not rejected when it is actually false.

A clean air standard requires that vehicle exhaust emissions not exceed the specified limits for various pollutants. Suppose state regulators will revoke a repair shop's license if they find significant evidence that the vehicles repaired do not meet standards.

1. Identify the null and alternative hypotheses.
2. What is the Type I error ?
3. What is the Type II error?
4. Which type of error would the shop's owner consider more serious?
5. Which type of error might environmentalists consider more serious?

Your company markets a computerized medical diagnostic program. The program scans the results of routine medical tests and either clears the patient or refers the case to a doctor. The program is used to screen thousands of people who do not have specific medical complaints. The program makes a decision about each person.

6. Identify the null and alternative hypotheses.
7. What is the Type I error?
8. What is the Type II error?
9. In your opinion, which error is more harmful for this situation? Explain.

A company specializes in parachute assembly. The parachutes are inspected to determine if they are safe.

10. Identify the null and alternative hypotheses.
11. What is the Type I error?
12. What is the Type II error?
13. Which error is more harmful? Explain.

The USDA inspects chicken for salmonella contamination. The inspectors determine if the chicken has salmonella.

14. Identify the null and alternative hypotheses.
15. What is the Type I error?
16. What is the Type II error?
17. Which type of error would be more harmful to the company?
18. Which type of error would be more harmful to the consumer?