Week One Supplement 2.0, 2.1, 2.2

Part One 2.0

Experiment with sums and products of two numbers from the following list to answer the questions that follow: 5, ½, 0, π.

Based on the above information, conjecture which of the statements is ALWAYS true, which is SOMETIMES true, and which is NEVER true.

1. The sum of a rational number and a rational number is rational.
2. The sum of a rational number and an irrational number is irrational.
3. The sum of an irrational number and an irrational number is irrational.
4. The product of a rational number and a rational number is rational.
5. The product of a rational number and an irrational number is irrational.
6. The product of an irrational number and an irrational number is irrational.

Part Two 2.1

Write a proportion for each problem (1 and 2), and solve for the unknown.

1. Leaf-cutter ants that live in Central and South America weigh about 1.5 grams. One ant can carry a 4 gram piece of leaf that is about the size of a dime. If a person could carry proportionally as much as the leaf-cutter ant, how much could a 55 kilogram algebra student carry?
2. The leaf-cutter ant is about 1.27 cm long and takes strides of 0.84 cm. if a person could take proportionally equivalent strides, what size strides would a 1.65 meter tall algebra student take?
3. Write three other true proportions using the four values in the proportion.

Part Three 2.2

1. Write the question “What number is 15% of 120?” as a proportion.
2. There are 1582 students attending a local high school. Seventeen percent of the students are 12th grade. How many students is that?