Name: _____   Date: _____

Chapter 9 Problems of the Week

1. For what value(s) of x is $\frac{1}{x} > 1$ true? Express your answer as an inequality. Explain your thinking.	**2.** Given that a, b, and c are whole numbers, if $a < b$, is $ac < bc$ always true? Explain.
3. Consider the following pattern: Daniel fills a hole with sand. He starts with a pail that contains 10 kg of sand. The next pail has 5 kg of sand, the next pail has 2.5 kg, and so on, to an infinite number of pails. At what point will the hole contain > 20 kg of sand? Explain your thinking.	**4.** Write the mathematical statements. Then, solve for x. **a)** The opposite of four multiplied by x then decreased by two-and-one-half is less than or equal to the opposite of ten. **b)** Twice x increased by three is less than one half decreased by x. **c)** Negative five times x increased by three-and-one-half is equal to the opposite of x increased by thirteen-and-one-half.

5. If $x > 7$, and $y < 9$, and $z \leq 8$, what is the inequality that expresses $x = y = z$? Express your answer using a number line.