NAME_____

Module 5 **Decimal Operations, Exponents, and Powers**
Lesson 1 **Rounding and Comparing Decimals**

Challenge Problems 5.1

Set 1

1. If zero as a symbol means "nothing," explain why it is important to write the zero in the number 45.048.

2. Describe a situation when 5.86 might need to be rounded to the nearest tenth.

Set 2

1. Explain how to compare 5.68 and 5.61 using <, >, or =.

2. Round 2.07 and 2.132 to the nearest tenth. Then, compare the rounded numbers using <, >, or =.

Set 3

1. Explain how to compare a decimal and zero.

2. Explain how to use absolute value to compare two positive integers.

3. Explain how to use absolute value to compare two negative integers.

Possible Answers

Set 1

1. Zero used by itself means nothing, but zero also can be used as a placeholder. In the number 45.048, the zero indicates that there are zero tenths. If the zero were taken out, then the number would be 45.48, which is a totally different amount.

2. To find how many dimes are needed to pay for something that costs $5.86 cents, round to the nearest tenth. Since $5.86 rounds to $5.90, nine dimes are needed.

Set 2

1. Start comparing the numbers in the corresponding place-value columns. Five is in the ones place of both numbers, so each of these numbers is more than five and less than six. Both have six tenths in the tenths place. In the hundredths place, eight hundredths is greater than one hundredth. Therefore, five and 68 hundredths is greater than five and 61 hundredths. To write the statement, write the numbers and write a symbol so that the open end of the symbol opens toward five and 68 hundredths, the greater number, and points to the smaller number, five and 61 hundredths: $5.68 > 5.61$.

2. First, round 2.07 to the nearest tenth. Since seven is in the hundredths place, 2.07 rounds to 2.1. Next, round 2.132 to the nearest tenth. Since three is in the hundredths place, 2.132 rounds to 2.1. The rounded numbers are the same. $2.1 = 2.1$.

Set 3

1. Decimals to the right of zero on a number line are positive and greater than zero. Decimals to the left of zero on a number line are negative and less than zero.

2. For two positive numbers, the one that has the larger absolute value is farther from zero. The greater the absolute value of a positive integer, the larger the number.

3. When comparing two negative numbers, the one with the greater absolute value is farther from zero on the number line. The farther the number is to the left, the less it is. So, the greater the absolute value, the smaller the number.