

# Working With Numbers from Measurements in Calculations

## Significant Figures

Because the numbers we receive from measurements have a level of uncertainty we need to reflect that in our calculations. We do this by using significant figures. **Significant figures** in a measure consist of all digits known with a certainty plus one final digit, which is uncertain or estimated. Some numbers have an infinite number of significant figures such as conversion factors from one magnitude to another such as  $1\text{ kg} = 1,000\text{ grams}$ . There could be an infinite number of zeros on the right side of the decimal. Most values don't and so we need to learn how to handle them in reading them and in calculations. A system known as the Atlantic-Pacific rule has been set up to help in remembering the rules of determining which digits are significant (figure 2.6).

If you have a decimal **p**resent, start from the Pacific side (left) of the number and move right to the first nonzero digit. This digit and every digit to its right is significant.

If the decimal is **a**bsent, start from the Atlantic side (right) of the number and move left to the first nonzero digit. This and every other digit is significant.

