To Change a Decimal to the Equivalent Fraction or Mixed Number

- Copy the nonzero whole-number part of the decimal and drop the decimal point.
- Place the fractional part of the decimal in the numerator of the equivalent fraction.
- Make the denominator of the equivalent fraction the same as the place value of the rightmost digit.

EXAMPLE 1

Write each decimal as a fraction or mixed number.

a. 0.25   **b.** 1.398

Solution

a. Write 0.25 as $\dfrac{25}{100}$, which simplifies to $\dfrac{1}{4}$. So $0.25 = \dfrac{1}{4}$.

b. The decimal 1.398 is equivalent to a mixed number. The whole-number part is 1. The fractional part (.398) of the decimal (without the decimal point) is the numerator of the equivalent fraction. Since the decimal has three decimal places, the denominator of the fraction is 1000.

So $1.398 = 1\dfrac{398}{1000} = 1\dfrac{199}{500}$.

PRACTICE 1

Express each decimal in fractional form.

a. 0.5

b. 2.073

EXAMPLE 2

Write 2.019 in words.

Solution The fractional part of 2.019 is .019, which is equivalent to $\dfrac{19}{1000}$. We read the original decimal as "two and nineteen thousandths," keeping the whole number unchanged. Note that we use the word *and* to separate the whole number and the fractional part.

PRACTICE 2

Write 4.003 in words.

In computations with decimals, we sometimes *round* the decimal to a certain number of decimal places.

To Round a Decimal to a Given Decimal Place

- Underline the place to which you are rounding.
- Look at the digit to the right of the underlined digit—*the critical digit*. If this digit is 5 or more, add 1 to the underlined digit; if it is less than 5, leave the underlined digit unchanged.
- Drop all places to the right of the underlined digit.