

Check Your Answers on Conversions!

1) $\frac{37}{100}$

The number 0.37 is read as “thirty-seven hundredths” which means that the denominator of the fraction must be 100. Because there are no common factors between the numerator and denominator, this fraction is already in simplified form.

2) $\frac{3}{4}$ ($0.75 = \frac{75}{100} \div \frac{25}{25} = \frac{3}{4}$)

The number 0.75 is read as “seventy-five hundredths.” After producing a fraction with the denominator 100, note that there are common factors between the numerator and denominator. Simplify by dividing both numerator and denominator by the same number (which is a form of 1). Although it is preferable to divide by the GCF (greatest common factor), it is possible to divide by 5 twice and produce the same result.

3) $\frac{6}{2500}$ ($0.0024 = \frac{24}{10,000} \div \frac{8}{8} = \frac{3}{1250}$)

0.0024 is read as “twenty-four ten-thousandths.” Produce a fraction with the denominator 10,000 and simplify, dividing by a form of 1.

4) $6\frac{4}{5}$ ($6.8 = 6\frac{8}{10}$ with $\frac{8}{10} \div \frac{2}{2} = \frac{4}{5}$ so $6.8 = 6\frac{4}{5}$)

Any problem with this one? (Use the same process as described in the preceding problems with “6” as the whole in the mixed number.)

$3.\overline{08}$ means 3.08080808... The digits continue to repeat indefinitely. A repeating decimal can be changed to a fraction as follows:

5) $\frac{305}{99}$ or $3\frac{8}{99}$

Define a variable as the repeating decimal:

$$\text{Let } x = 3.\overline{08}$$

Multiply both sides of the above equation by 100:

$$100x = 308.\overline{08}$$

Subtract the original equation from both sides:

$$- (x = 3.\overline{08})$$

(Note that the repeating digits are eliminated.)

$$\frac{99x = 305}{99x = 305}$$

Divide both sides by 99:

$$x = \frac{305}{99} \text{ or } 3\frac{8}{99}$$

6) 0.41

Recalling place value, hundredths is the second place to the right of the decimal point. The final digit “1” must be positioned to fall in that hundredths place.

7) 0.48 ($\frac{12}{25} \times \frac{4}{4} = \frac{48}{100} = 0.48$)

The fraction bar does indicate division ($12 \div 25$). However, in this case it is simpler to produce an equivalent fraction with a denominator of 100 (a power of 10) by multiplying by a form of 1. This method uses place value to quickly convert to a decimal.

8) 0.875

In this case, it would be difficult to produce a denominator that is a power of 10. To convert this fraction to a decimal, recall that the fraction bar is actually a division symbol and divide the numerator by the denominator. To divide without a calculator, add zeros as place holders to the right of the decimal point in the dividend as necessary. Recall that the decimal point in the quotient (answer) will be directly above the decimal point in the dividend.

$$\begin{array}{r} 0,875 \\ 7 \overline{) 7,000} \\ \underline{- 64} \\ 60 \\ \underline{- 56} \\ 40 \\ \underline{- 40} \\ 0 \end{array}$$

9) $0.\overline{5}$

$$\begin{array}{r} 0,555 \\ 5 \overline{) 5,000} \\ \underline{- 45} \\ 50 \\ \underline{- 45} \\ 50 \\ \underline{- 45} \\ 5 \end{array}$$

Dividing the numerator by the denominator repeatedly produces the same digit 5 with a remainder of 5. Because the division would continue indefinitely with the repeated digit of 5 and the same remainder, this is a repeating decimal (rather than a terminating decimal). Repeating decimals are noted with a bar above the digit(s) that repeat.

10) 3.2

Of course, 3 will be placed to the left of the decimal point. Either method (producing a fraction whose denominator is a power of 10 or dividing the numerator by the denominator) could be used.