

# Fraction and Decimal Equivalents

Advanced

Sometimes you will need to either change a decimal to a fraction or a fraction to a decimal.

To write a decimal as a fraction, identify the value of the last place in the decimal. Use this place value to write the denominator. Simplify if possible.

To write a fraction that has a denominator of 10; 100; or 1,000 as a decimal, write the digits from the numerator. Write the decimal point so that the number of decimal places is the same as the number of zeros in the denominator of the fraction. Write zeros as needed.

Decimal	Fraction or Mixed Number	Fraction or Mixed Number	Decimal
0.9	$= \frac{9}{10}$	$\frac{3}{10} =$	0.3
0.01	$= \frac{1}{100}$	$\frac{15}{100} =$	0.15
0.045	$= \frac{45}{1000} = \frac{9}{200}$	$\frac{6}{1000} =$	0.006
1.74	$= 1\frac{74}{100} = 1\frac{37}{50}$	$\frac{59}{10}$ or $5\frac{9}{10} =$	5.9

Write each decimal as a fraction. Simplify.

1. 0.4 = \_\_\_\_\_      2. 0.6 = \_\_\_\_\_      3. 0.08 = \_\_\_\_\_      4. 0.002 = \_\_\_\_\_  
 5. 0.21 = \_\_\_\_\_      6. 0.083 = \_\_\_\_\_      7. 0.901 = \_\_\_\_\_      8. 0.018 = \_\_\_\_\_

Write each decimal as a mixed number. Simplify.

9. 4.5 = \_\_\_\_\_      10. 1.62 = \_\_\_\_\_      11. 10.1 = \_\_\_\_\_      12. 1.275 = \_\_\_\_\_  
 13. 9.07 = \_\_\_\_\_      14. 38.24 = \_\_\_\_\_      15. 5.46 = \_\_\_\_\_      16. 13.8 = \_\_\_\_\_

Write each fraction as a decimal.

17.  $\frac{1}{10} =$  \_\_\_\_\_      18.  $\frac{2}{10} =$  \_\_\_\_\_      19.  $\frac{5}{10} =$  \_\_\_\_\_      20.  $\frac{7}{10} =$  \_\_\_\_\_  
 21.  $\frac{6}{100} =$  \_\_\_\_\_      22.  $\frac{80}{100} =$  \_\_\_\_\_      23.  $\frac{52}{1000} =$  \_\_\_\_\_      24.  $\frac{416}{1000} =$  \_\_\_\_\_  
 25.  $\frac{56}{10} =$  \_\_\_\_\_      26.  $\frac{31}{10} =$  \_\_\_\_\_      27.  $\frac{76}{10} =$  \_\_\_\_\_      28.  $\frac{65}{100} =$  \_\_\_\_\_  
 29.  $\frac{103}{100} =$  \_\_\_\_\_      30.  $\frac{509}{100} =$  \_\_\_\_\_      31.  $\frac{1643}{1000} =$  \_\_\_\_\_      32.  $\frac{2051}{1000} =$  \_\_\_\_\_

# More Fraction and Decimal Equivalents

Not all fractions can be changed to decimal form easily. To write fractions that have denominators other than 10; 100; or 1,000 as decimals, first write an equivalent fraction that has a denominator of 10; 100; or 1,000. Then write the equivalent fraction as a decimal.

Some fractions do not have simple decimal equivalents.

Examples:  $\frac{2}{3} = 0.666 \dots$  and  $\frac{5}{6} = 0.833 \dots$

Write  $\frac{1}{5}$  as a decimal.

Write  $\frac{1}{5}$  with 10 as the denominator.

$$\frac{1}{5} = \frac{1 \times 2}{5 \times 2} = \frac{2}{10}$$

Write the fraction as a decimal.

$$= 0.2$$

Write  $2\frac{3}{4}$  as a decimal.

Write  $2\frac{3}{4}$  as an improper fraction.

$$2\frac{3}{4} = \frac{11}{4}$$

Write the new fraction with 100 as the denominator.

$$\frac{11}{4} = \frac{11 \times 25}{4 \times 25} = \frac{275}{100}$$

Write the fraction as a decimal.

$$= 2.75$$

Write each fraction as a decimal.

1.  $\frac{1}{8} = \frac{1 \times 125}{8 \times 125} = \frac{125}{1000} =$  \_\_\_\_\_

2.  $\frac{2}{5} =$  \_\_\_\_\_

3.  $\frac{3}{20} =$  \_\_\_\_\_

4.  $\frac{4}{5} =$  \_\_\_\_\_

5.  $\frac{17}{50} =$  \_\_\_\_\_

6.  $\frac{11}{25} =$  \_\_\_\_\_

7.  $\frac{7}{200} =$  \_\_\_\_\_

8.  $\frac{8}{25} =$  \_\_\_\_\_

9.  $\frac{3}{8} =$  \_\_\_\_\_

10.  $\frac{13}{2} = \frac{13 \times 5}{2 \times 5} = \frac{65}{10} =$  \_\_\_\_\_

11.  $\frac{43}{20} =$  \_\_\_\_\_

12.  $\frac{37}{5} =$  \_\_\_\_\_

13.  $\frac{25}{4} =$  \_\_\_\_\_

14.  $\frac{69}{50} =$  \_\_\_\_\_

15.  $\frac{39}{25} =$  \_\_\_\_\_

Write each mixed number as a decimal.

16.  $1\frac{9}{20} = \frac{29}{20} = \frac{29 \times 5}{20 \times 5} = \frac{145}{100} =$  \_\_\_\_\_

17.  $2\frac{21}{25} =$  \_\_\_\_\_

18.  $6\frac{3}{25} =$  \_\_\_\_\_

19.  $13\frac{1}{50} =$  \_\_\_\_\_

20.  $19\frac{1}{2} =$  \_\_\_\_\_

21.  $4\frac{7}{8} =$  \_\_\_\_\_