

## Converting Tenths to Decimals

CBF 1

**Instructions:** Write each fraction as a decimal number. (Then try it without the number place boxes in the second half of the exercise set.)

1  $\frac{5}{10} = 0.5$

2  $\frac{9}{10} = 0.9$

3  $\frac{8}{10} = 0.8$

4  $\frac{0}{10} = 0.0$

5  $\frac{3}{10} = 0.3$

6  $\frac{6}{10} = 0.6$

7  $\frac{1}{10} = 0.1$

8  $\frac{4}{10} = 0.4$

9  $\frac{7}{10} = 0.7$

10  $\frac{2}{10} = 0.2$

11  $\frac{4}{10} = 0.4$

12  $\frac{7}{10} = 0.7$

13  $\frac{5}{10} = 0.5$

14  $\frac{2}{10} = 0.2$

15  $\frac{9}{10} = 0.9$

16  $\frac{6}{10} = 0.6$

17  $\frac{1}{10} = 0.1$

18  $\frac{8}{10} = 0.8$

19  $\frac{0}{10} = 0.0$

20  $\frac{3}{10} = 0.3$

## Converting Hundredths to Decimals

CBF 2

Instructions: Write each fraction as a decimal number.

1  $\frac{4}{100} = \underline{0.04}$

2  $\frac{20}{100} = \underline{0.20}$

3  $\frac{22}{100} = \underline{0.22}$

4  $\frac{79}{100} = \underline{0.79}$

5  $\frac{10}{100} = \underline{0.10}$

6  $\frac{85}{100} = \underline{0.85}$

7  $\frac{8}{100} = \underline{0.08}$

8  $\frac{15}{100} = \underline{0.15}$

9  $\frac{50}{100} = \underline{0.50}$

10  $\frac{63}{100} = \underline{0.63}$

11  $\frac{42}{100} = \underline{0.42}$

12  $\frac{41}{100} = \underline{0.41}$

13  $\frac{9}{100} = \underline{0.09}$

14  $\frac{17}{100} = \underline{0.17}$

15  $\frac{1}{100} = \underline{0.01}$

16  $\frac{7}{100} = \underline{0.07}$

17  $\frac{75}{100} = \underline{0.75}$

18  $\frac{33}{100} = \underline{0.33}$

19  $\frac{38}{100} = \underline{0.38}$

20  $\frac{99}{100} = \underline{0.99}$

## Converting Thousandths to Decimals

CBF 3

Instructions: Write each fraction as a decimal number.

1  $\frac{8}{1,000} = \underline{0.008}$

2  $\frac{99}{1,000} = \underline{0.099}$

3  $\frac{155}{1,000} = \underline{0.155}$

4  $\frac{737}{1,000} = \underline{0.737}$

5  $\frac{38}{1,000} = \underline{0.038}$

6  $\frac{290}{1,000} = \underline{0.290}$

7  $\frac{25}{1,000} = \underline{0.025}$

8  $\frac{10}{1,000} = \underline{0.010}$

9  $\frac{570}{1,000} = \underline{0.570}$

10  $\frac{16}{1,000} = \underline{0.016}$

11  $\frac{345}{1,000} = \underline{0.345}$

12  $\frac{999}{1,000} = \underline{0.999}$

13  $\frac{30}{1,000} = \underline{0.030}$

14  $\frac{100}{1,000} = \underline{0.100}$

15  $\frac{700}{1,000} = \underline{0.700}$

16  $\frac{55}{1,000} = \underline{0.055}$

17  $\frac{1}{1,000} = \underline{0.001}$

18  $\frac{605}{1,000} = \underline{0.605}$

19  $\frac{48}{1,000} = \underline{0.048}$

20  $\frac{180}{1,000} = \underline{0.180}$

## Converting Fractions to Decimals - Mixed Practice

CBF 4

Instructions: Write each fraction as a decimal number.

1  $\frac{47}{100} = \underline{0.47}$

2  $\frac{125}{1,000} = \underline{0.125}$

3  $\frac{80}{1,000} = \underline{0.080}$

4  $\frac{95}{100} = \underline{0.95}$

5  $\frac{6}{10} = \underline{0.6}$

6  $\frac{35}{100} = \underline{0.35}$

7  $\frac{482}{1,000} = \underline{0.482}$

8  $\frac{2}{10} = \underline{0.2}$

9  $\frac{9}{10} = \underline{0.9}$

10  $\frac{36}{1,000} = \underline{0.036}$

11  $\frac{86}{100} = \underline{0.86}$

12  $\frac{360}{1,000} = \underline{0.360}$

13  $\frac{70}{1,000} = \underline{0.070}$

14  $\frac{21}{100} = \underline{0.21}$

15  $\frac{75}{100} = \underline{0.75}$

16  $\frac{5}{1,000} = \underline{0.005}$

17  $\frac{12}{100} = \underline{0.12}$

18  $\frac{5}{10} = \underline{0.5}$

19  $\frac{8}{10} = \underline{0.8}$

20  $\frac{5}{100} = \underline{0.05}$

21  $\frac{65}{100} = \underline{0.65}$

22  $\frac{874}{1,000} = \underline{0.874}$

23  $\frac{510}{1,000} = \underline{0.510}$

24  $\frac{37}{100} = \underline{0.37}$

## Converting Decimals to Fractions

CBF 5

Instructions: Convert these decimals into fractions.

Examples

one place →  $0.7 = \frac{7}{10}$   
one zero

two places →  $0.72 = \frac{72}{100}$   
two zeros

three places →  $0.725 = \frac{725}{1000}$   
three zeros

1  $0.1 = \frac{1}{10}$

2  $0.250 = \frac{250}{1000}$

3  $0.29 = \frac{29}{100}$

4  $0.80 = \frac{80}{100}$

5  $0.015 = \frac{15}{1000}$

6  $0.97 = \frac{97}{100}$

7  $0.4 = \frac{4}{10}$

8  $0.107 = \frac{107}{1000}$

9  $0.25 = \frac{25}{100}$

10  $0.3 = \frac{3}{10}$

11  $0.312 = \frac{312}{1000}$

12  $0.61 = \frac{61}{100}$

13  $0.070 = \frac{70}{1000}$

14  $0.552 = \frac{552}{1000}$

15  $0.43 = \frac{43}{100}$

16  $0.2 = \frac{2}{10}$

17  $0.8 = \frac{8}{10}$

18  $0.010 = \frac{10}{1000}$

19  $0.09 = \frac{9}{100}$

20  $0.349 = \frac{349}{1000}$

## Converting Any Fraction to a Decimal (by Dividing)

CAF 1

**Instructions:** Use 'decimal division' to convert these fractions into decimal values. These all have non-repeating digits. Be sure to show your work!

**1**  $\frac{2}{5} = \underline{0.4}$

$$\begin{array}{r} 0.4 \\ 5 \overline{) 2.0} \\ \underline{- 20} \\ 0 \end{array}$$

**2**  $\frac{1}{4} = \underline{0.25}$

$$\begin{array}{r} 0.25 \\ 4 \overline{) 1.00} \\ \underline{- 8} \\ 20 \\ \underline{- 20} \\ 0 \end{array}$$

**3**  $\frac{3}{4} = \underline{0.75}$

$$\begin{array}{r} 0.75 \\ 4 \overline{) 3.00} \\ \underline{- 28} \\ 20 \\ \underline{- 20} \\ 0 \end{array}$$

**4**  $\frac{3}{8} = \underline{0.375}$

$$\begin{array}{r} 0.375 \\ 8 \overline{) 3.000} \\ \underline{- 24} \\ 60 \\ \underline{- 56} \\ 40 \\ \underline{- 40} \\ 0 \end{array}$$

**5**  $\frac{1}{8} = \underline{0.125}$

$$\begin{array}{r} 0.125 \\ 8 \overline{) 1.000} \\ \underline{- 8} \\ 20 \\ \underline{- 16} \\ 40 \\ \underline{- 40} \\ 0 \end{array}$$

**6**  $\frac{5}{8} = \underline{0.625}$

$$\begin{array}{r} 0.625 \\ 8 \overline{) 5.000} \\ \underline{- 48} \\ 20 \\ \underline{- 16} \\ 40 \\ \underline{- 40} \\ 0 \end{array}$$

## Repeating Decimals from Fractions

CAF 2

**Instructions:** Use 'decimal division' to convert these fractions into decimal values. These all have repeating digits. Be sure to show your work!

**Example**

$$\frac{1}{6} = \underline{0.1\bar{6}}$$

$$\begin{array}{r} 0.166 \\ 6 \overline{) 1.000} \\ \underline{- 6} \phantom{00} \\ 40 \\ \underline{- 36} \\ 40 \\ \underline{- 36} \\ 4 \end{array}$$

same pattern in division means a repeating decimal

1  $\frac{1}{9} = \underline{0.1\bar{1}}$

$$\begin{array}{r} 0.11 \\ 9 \overline{) 1.00} \\ \underline{- 9} \phantom{00} \\ 10 \\ \underline{- 9} \\ 1 \end{array}$$

2  $\frac{5}{9} = \underline{0.5\bar{5}}$

$$\begin{array}{r} 0.55 \\ 9 \overline{) 5.00} \\ \underline{- 45} \phantom{00} \\ 50 \\ \underline{- 45} \\ 5 \end{array}$$

3  $\frac{5}{12} = \underline{0.41\bar{6}}$

$$\begin{array}{r} 0.4166 \\ 12 \overline{) 5.0000} \\ \underline{- 48} \phantom{0000} \\ 20 \phantom{000} \\ \underline{- 12} \phantom{000} \\ 80 \phantom{00} \\ \underline{- 72} \phantom{00} \\ 80 \phantom{0} \\ \underline{- 72} \\ 8 \end{array}$$

4  $\frac{3}{11} = \underline{0.2\bar{7}}$

$$\begin{array}{r} 0.2727 \\ 11 \overline{) 3.0000} \\ \underline{- 22} \phantom{0000} \\ 80 \phantom{000} \\ \underline{- 77} \phantom{000} \\ 30 \phantom{00} \\ \underline{- 22} \phantom{00} \\ 80 \phantom{0} \\ \underline{- 77} \\ 3 \end{array}$$

## Long Repeating Decimals from Fractions

CAF 3

**Instructions:** Use 'decimal division' to convert these fractions into decimal values. These all have long decimal parts, so **round off** to **three** decimal places. Be sure to show your work!

Example

$$\frac{1}{7} = \underline{0.143}$$

$$\begin{array}{r} 0.1428 \\ 7 \overline{) 1.0000} \\ \underline{- 7} \phantom{00} \\ 30 \phantom{0} \\ \underline{- 28} \phantom{0} \\ 20 \phantom{0} \\ \underline{- 14} \phantom{0} \\ 60 \\ \underline{56} \phantom{0} \end{array}$$

let's just stop here and round off our answer

1  $\frac{3}{7} = \underline{0.429}$

$$\begin{array}{r} 0.4285 \\ 7 \overline{) 3.0000} \\ \underline{- 28} \phantom{00} \\ 20 \phantom{0} \\ \underline{- 14} \phantom{0} \\ 60 \phantom{0} \\ \underline{- 56} \phantom{0} \\ 40 \phantom{0} \\ \underline{- 35} \phantom{0} \\ 5 \phantom{0} \end{array}$$

2  $\frac{6}{7} = \underline{0.857}$

$$\begin{array}{r} 0.8571 \\ 7 \overline{) 6.0000} \\ \underline{- 56} \phantom{00} \\ 40 \phantom{0} \\ \underline{- 35} \phantom{0} \\ 50 \phantom{0} \\ \underline{- 49} \phantom{0} \\ 10 \phantom{0} \\ \underline{- 7} \phantom{0} \\ 3 \phantom{0} \end{array}$$

3  $\frac{5}{13} = \underline{0.385}$

$$\begin{array}{r} 0.3846 \\ 13 \overline{) 5.0000} \\ \underline{- 39} \phantom{00} \\ 110 \phantom{0} \\ \underline{- 104} \phantom{0} \\ 60 \phantom{0} \\ \underline{- 52} \phantom{0} \\ 80 \phantom{0} \\ \underline{- 78} \phantom{0} \\ 2 \phantom{0} \end{array}$$

4  $\frac{2}{17} = \underline{0.118}$

$$\begin{array}{r} 0.1176 \\ 17 \overline{) 2.0000} \\ \underline{- 17} \phantom{00} \\ 30 \phantom{0} \\ \underline{- 17} \phantom{0} \\ 130 \phantom{0} \\ \underline{- 119} \phantom{0} \\ 110 \phantom{0} \\ \underline{- 102} \phantom{0} \\ 8 \phantom{0} \end{array}$$



## Converting with a Calculator

CAF 4

**Instructions:** The following fractions have been converted to decimals with a calculator. Round the answers off to **three** decimal places or use the repeat symbol to shorten the answer if you see a repeating pattern.

1  $\frac{2}{7} = 0.2857142... = \underline{0.286}$

2  $\frac{7}{9} = 0.7777777... = \underline{0.\overline{7}}$

3  $\frac{15}{21} = 0.7142857... = \underline{0.714}$

4  $\frac{19}{33} = 0.5757575... = \underline{0.5\overline{7}}$

5  $\frac{9}{14} = 0.6428571... = \underline{0.643}$

6  $\frac{9}{23} = 0.3913043... = \underline{0.391}$

7  $\frac{8}{11} = 0.7272727... = \underline{0.7\overline{2}}$

8  $\frac{6}{19} = 0.3157894... = \underline{0.316}$

9  $\frac{7}{22} = 0.3181818... = \underline{0.31\overline{8}}$

10  $\frac{11}{12} = 0.9166666... = \underline{0.91\overline{6}}$

**Instructions:** Use a calculator to convert these fractions to decimals. Round off to **three** decimal places or use the repeat symbol if you see a repeating pattern.

1  $\frac{4}{7} = \underline{0.571}$

2  $\frac{12}{17} = \underline{0.706}$

3  $\frac{12}{13} = \underline{0.923}$

4  $\frac{15}{22} = \underline{0.6\overline{81}}$

5  $\frac{10}{11} = \underline{0.9\overline{0}}$

6  $\frac{3}{13} = \underline{0.231}$

7  $\frac{16}{31} = \underline{0.516}$

8  $\frac{4}{3} = \underline{1.\overline{3}}$