

Fractions and Decimals

Name Solutions

1. Write the decimal in fraction form.

a. 0.7

$$\frac{7}{10}$$

b. 0.77

$$\frac{77}{100}$$

c. 0.07

$$\frac{7}{100}$$

2. Use long division to write the fraction as a decimal.

a.  $\frac{5}{8}$

$5 \div 8$

$$\begin{array}{r} .625 \\ 8 \overline{) 5.000} \\ \underline{-48} \phantom{00} \\ 20 \phantom{0} \\ \underline{-16} \phantom{0} \\ 40 \phantom{0} \\ \underline{-40} \\ 0 \end{array}$$

b.  $\frac{7}{5}$

$7 \div 5$

$$\begin{array}{r} 1.4 \\ 5 \overline{) 7.00} \\ \underline{-5} \phantom{00} \\ 20 \phantom{0} \\ \underline{-20} \\ 0 \end{array}$$

c.  $\frac{4}{9}$

$$\begin{array}{r} .444 \\ 9 \overline{) 4.00} \\ \underline{-36} \phantom{00} \\ 40 \phantom{0} \\ \underline{-36} \phantom{00} \\ 40 \phantom{0} \\ \underline{-36} \\ 4 \end{array}$$

d.  $\frac{5}{12}$

$$\begin{array}{r} .41666 \\ 12 \overline{) 5.000} \\ \underline{-48} \phantom{00} \\ 20 \phantom{0} \\ \underline{-12} \phantom{00} \\ 80 \phantom{0} \\ \underline{-72} \phantom{00} \\ 80 \phantom{0} \\ \underline{-80} \\ 0 \end{array}$$

e.  $\frac{10}{3}$

*10 inside outside*

$$\begin{array}{r} 3.\overline{3} \\ 3 \overline{) 10.00} \\ \underline{-9} \phantom{00} \\ 10 \phantom{0} \\ \underline{-9} \phantom{00} \\ 10 \phantom{0} \\ \underline{-9} \\ 1 \end{array}$$

f.  $\frac{2}{15}$

$$\begin{array}{r} .133 \\ 15 \overline{) 2.00} \\ \underline{-15} \phantom{00} \\ 50 \phantom{0} \\ \underline{-45} \phantom{00} \\ 50 \phantom{0} \\ \underline{-45} \\ 5 \end{array}$$

3. Use your answers from problem 2 to place an  $<$ ,  $>$ , or  $=$  symbol in the box to make a true statement.

a.  $\frac{5}{8} < 0.7$

b.  $\frac{4}{9} > 0.4$

c.  $\frac{5}{12} < 0.42$

d.  $\frac{2}{5} = 0.4$

$$\begin{array}{r} .4 \\ 5 \overline{) 2.0} \\ \underline{-20} \\ 0 \end{array}$$

e.  $\frac{3}{4} = 0.75$

f.  $\frac{2}{15} > 0.13$

$.1333 > .1300$

4. Write the numbers in order from smallest to largest.  $7\frac{3}{8}, 7.08, \frac{43}{6} = 7\frac{1}{6}$

$\frac{3}{8}$

$$\begin{array}{r} .375 \\ 8 \overline{) 3.000} \\ \underline{-24} \phantom{00} \\ 60 \phantom{0} \\ \underline{-56} \phantom{00} \\ 40 \phantom{0} \\ \underline{-40} \\ 0 \end{array}$$

$7.375, 7.08, 7.\overline{16}$

$$\begin{array}{r} .1666... \\ 6 \overline{) 1.00} \\ \underline{-6} \phantom{00} \\ 40 \phantom{0} \\ \underline{-36} \phantom{00} \\ 4 \end{array}$$

in order:  
 $7.08, 7.\overline{16}, 7.375$

5. Convert the decimal to a fraction, then perform the indicated operation.

a.  $\frac{2}{3} + 0.2$  LCD = 30  
 $\frac{2 \cdot 10}{3 \cdot 10} + \frac{2 \cdot 3}{10 \cdot 3} = \frac{20}{30} + \frac{6}{30}$   
 $= \frac{26}{30} = \frac{13}{15}$

b.  $0.9 - \frac{5}{6}$  LCD = 30  
 $\frac{9 \cdot 3}{10 \cdot 3} - \frac{5 \cdot 5}{6 \cdot 5} = \frac{27}{30} - \frac{25}{30} = \frac{2}{30} = \frac{1}{15}$

c.  $0.25 \left( \frac{2}{5} \right)$   
 $\frac{5}{100} \cdot \frac{1}{2} = \frac{1}{4}$   
 $\frac{1}{4} \cdot \frac{2}{5} = \frac{1}{10}$

d.  $\frac{7}{8} \div 0.1$   
 $\frac{7}{8} \div \frac{1}{10} = \frac{7}{8} \cdot \frac{10}{1} = \frac{35}{4}$  or  $8\frac{3}{4}$

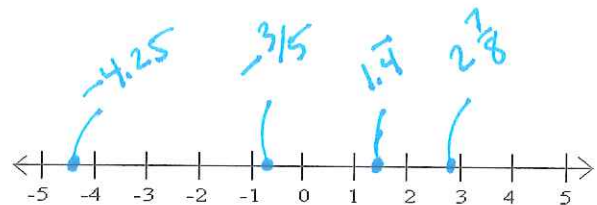
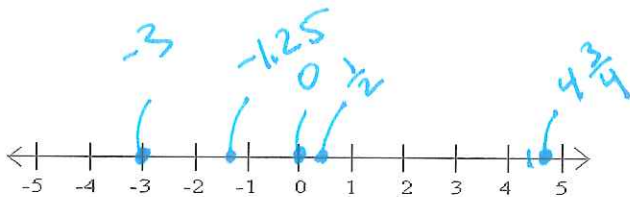
6. Explain the difference between the decimal number 0.8 and the decimal number  $0.\bar{8}$ .

0.8 is 0.8000, but  $0.\bar{8}$  is 0.8888  
 so  $\bar{8}$  is greater than .8

7. Graph the following numbers on a number line

a. -3, -1.25, 0,  $\frac{1}{2}$ ,  $4\frac{3}{4}$

b.  $2\frac{7}{8}$ ,  $1.\bar{4}$ , -4.25,  $-\frac{3}{5}$



8. Write the exact decimal equivalent to each fraction.

$\frac{1}{2} = .5$

$\frac{1}{3} = .\bar{3}$

$\frac{2}{3} = .\bar{6}$

$\frac{1}{4} = .25$

$\frac{2}{4} = .5$

$\frac{3}{4} = .75$

$\frac{1}{5} = .2$

$\frac{2}{5} = .4$

$\frac{3}{5} = .6$

$\frac{4}{5} = .8$

$\frac{1}{8} = .125$

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

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