

**Rounding Fractions**

Rounding fractions is more difficult than rounding whole numbers or decimals. For example, think about how you would round

$\frac{4}{9}$  inches to the nearest quarter-inch. Through estimation, you might realize that  $\frac{4}{9}$  is less than  $\frac{1}{2}$ . But, is it closer to  $\frac{1}{2}$  or to  $\frac{1}{4}$ ?

Here are two ways to round fractions. Example 1 uses only the fractions; Example 2 uses decimals.

**Example 1:**

Subtract the fraction twice. Use the two nearest quarters.

$$\frac{1}{2} - \frac{4}{9} = \frac{1}{18} \quad \frac{4}{9} - \frac{1}{4} = \frac{7}{36}$$

Compare the differences.

$$\frac{1}{18} < \frac{7}{36}$$

The smaller difference shows you which fraction to round to.

$$\frac{4}{9} \text{ rounds to } \frac{1}{2}.$$

**Example 2:**

Change the fraction and the two nearest quarters to decimals.

$$\frac{4}{9} = 0.4\bar{4}, \frac{1}{2} = 0.5, \frac{1}{4} = 0.25$$

Find the decimal halfway between the two nearest quarters.

$$\frac{1}{2}(0.5 + 0.25) = 0.375$$

If the fraction is greater than the halfway decimal, round up. If not, round down.

$0.4\bar{4} > 0.375$ . So,  $\frac{4}{9}$  is more than half way between  $\frac{1}{4}$  and  $\frac{1}{2}$ .

$$\frac{4}{9} \text{ rounds to } \frac{1}{2}.$$

**Round each fraction to the nearest one-quarter. Use either method.**

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

2.  $\frac{3}{7}$

3.  $\frac{7}{11}$

4.  $\frac{4}{15}$

5.  $\frac{7}{20}$

6.  $\frac{31}{50}$

7.  $\frac{9}{25}$

8.  $\frac{23}{30}$

**Round each decimal or fraction to the nearest one-eighth.**

9. 0.6

10. 0.1

11. 0.45

12. 0.85

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

14.  $\frac{3}{20}$

15.  $\frac{23}{25}$

16.  $\frac{5}{9}$