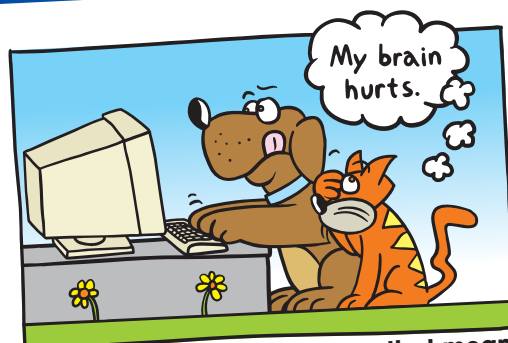


2 Multiplying and Dividing Fractions

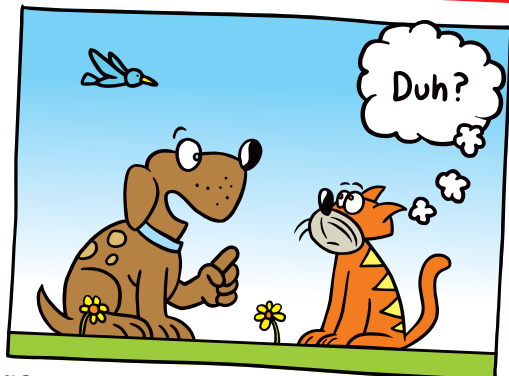
- 2.1 Fractions and Estimation
- 2.2 Multiplying Fractions and Whole Numbers
- 2.3 Multiplying Fractions
- 2.4 Multiplying Mixed Numbers
- 2.5 Dividing Fractions
- 2.6 Dividing Mixed Numbers
- 2.7 Writing Decimals as Fractions
- 2.8 Writing Fractions as Decimals



"Dear Sir: You say that **MOST** humans use only a fraction of their brain power."



"But, $\frac{3}{2}$ is a fraction. So, does that mean that **SOME** humans use one and a half of their brain power?"



"One of my homework problems is 'How many halves are in five halves?'"



What You Learned Before

● Adding and Subtracting Fractions



Example 1 Find $\frac{3}{4} + \frac{1}{8}$.

$$\begin{aligned}\frac{3}{4} + \frac{1}{8} &= \frac{3 \cdot 2}{4 \cdot 2} + \frac{1}{8} \\ &= \frac{6}{8} + \frac{1}{8} \\ &= \frac{7}{8}\end{aligned}$$

Use the Least Common Multiple to find a common denominator.

Example 2 Find $\frac{5}{6} - \frac{1}{5}$.

$$\begin{aligned}\frac{5}{6} - \frac{1}{5} &= \frac{5 \cdot 5}{6 \cdot 5} - \frac{1 \cdot 6}{5 \cdot 6} \\ &= \frac{25}{30} - \frac{6}{30} \\ &= \frac{19}{30}\end{aligned}$$

Try It Yourself

Find the sum or difference.

1. $\frac{1}{16} + \frac{1}{8}$

2. $\frac{1}{15} + \frac{4}{9}$

3. $\frac{1}{5} - \frac{2}{25}$

4. $\frac{3}{4} - \frac{2}{7}$

● Writing Mixed Numbers and Improper Fractions

Example 3

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

$$\begin{aligned}2\frac{3}{4} &= 2 + \frac{3}{4} \\ &= \frac{8}{4} + \frac{3}{4} \\ &= \frac{11}{4}\end{aligned}$$

Example 4

Write $\frac{23}{2}$ as a mixed number.

$$\begin{array}{r} 11 \text{ R}1 \\ 2 \overline{)23} \\ \underline{22} \\ 1 \end{array}$$

$$\frac{23}{2} = 11\frac{1}{2}$$

Try It Yourself

Write the mixed number as an improper fraction.

5. $3\frac{1}{2}$

6. $7\frac{5}{11}$

7. $5\frac{4}{5}$

8. $10\frac{2}{3}$

Write the improper fraction as a mixed number.

9. $\frac{28}{25}$

10. $\frac{100}{3}$

11. $\frac{17}{15}$

12. $\frac{57}{10}$