

$$\frac{15}{8} \times \frac{2}{3} = \frac{30}{24}$$

Lesson 6

Divide. Write the answer in simplest form.

1. $6\frac{2}{3} \div \frac{5}{6}$
 $\frac{20}{3} \div \frac{5}{6} = \frac{4\cancel{20}}{3} \times \frac{6^2}{\cancel{6}_1} = \frac{8}{1} = 8$

2. $8\frac{1}{3} \div 2\frac{2}{9}$
 $\frac{25}{3} \div \frac{20}{9} = \frac{5\cancel{25}}{3} \times \frac{9^3}{\cancel{20}_4} = \frac{15}{4} = 3\frac{3}{4}$

3. $\frac{8}{27} \div 4\frac{2}{9}$
 $\frac{8}{27} \div \frac{38}{9} = \frac{\cancel{8}^4}{27} \times \frac{9^1}{\cancel{38}_{19}} = \frac{4}{57}$

4. $21 \div 5\frac{1}{4}$
 $\frac{21}{1} \div \frac{21}{4} = \frac{\cancel{21}^1}{1} \times \frac{4}{\cancel{21}_1} = \frac{4}{1} = 4$

5. $9\frac{3}{5} \div 12$
 $\frac{48}{5} \div \frac{12}{1} = \frac{\cancel{48}^4}{5} \times \frac{1}{\cancel{12}_3} = \frac{4}{5}$

6. $3\frac{3}{4} \div 5\frac{1}{4}$
 $\frac{15}{4} \div \frac{21}{4} = \frac{\cancel{15}^5}{4} \times \frac{4^1}{\cancel{21}_7} = \frac{5}{7}$

7. Describe and correct the error in finding the quotient.

$$\times \quad 8 \div 2\frac{3}{4} = \frac{1}{8} \div \frac{11}{4} = \frac{1}{8} \times \frac{4}{11} = \frac{1}{22}$$

$$8 \div 2\frac{3}{4} = \frac{8}{1} \div \frac{11}{4} = \frac{8}{1} \times \frac{4}{11} = \frac{32}{11} = 2\frac{10}{11}$$

The work shows a reciprocal for 8. The 8 should be an improper fraction showing $\frac{8}{1}$ not $\frac{1}{8}$.
The solution is $2\frac{10}{11}$.

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Evaluate the expression. Write the answer in simplest form.

$$8. \quad 4\frac{1}{2} - \frac{3}{4} \div 2\frac{3}{8}$$

$$4\frac{1}{2} - \frac{6}{19}$$

$$\frac{3}{4} \div \frac{19}{8} = \frac{3}{4} \times \frac{8}{19} = \frac{6}{19}$$

$$4\frac{19}{38} - \frac{12}{38} = 4\frac{7}{38}$$

$$9. \quad 2\frac{3}{7} \div \frac{2}{3} \times \frac{3}{4} = \frac{17}{7} \times \frac{3}{2} \times \frac{3}{4} = \frac{153}{56} = 2\frac{51}{56}$$

$$10. \quad \frac{2}{3} \times \frac{5}{8} \div 3\frac{7}{12}$$

$$\frac{2}{3} \times \frac{5}{8} \div \frac{43}{12} = \frac{2}{3} \times \frac{5}{8} \times \frac{12}{43} = \frac{5}{43}$$

11. How many $6\frac{1}{4}$ -inch pieces of fabric can be cut from a 75-inch roll?

$$75 \div 6\frac{1}{4}$$

$$\frac{75}{1} \div \frac{25}{4} = \frac{75}{1} \times \frac{4}{25} = \frac{12}{1} = 12 \text{ pieces}$$

12. How many times heavier is a $16\frac{1}{2}$ -pound rock than a $10\frac{1}{2}$ -pound rock?

$$16\frac{1}{2} \div 10\frac{1}{2}$$

$$\frac{33}{2} \div \frac{21}{2} = \frac{33}{2} \times \frac{2}{21} = \frac{11}{7} = 1\frac{4}{7}$$

6x

**Lesson
6**

13. How many $2\frac{1}{2}$ acre plots can be made out of a 35-acre field?

$$35 \div 2\frac{1}{2}$$

$$\frac{35}{1} \div \frac{5}{2} = \frac{35}{1} \times \frac{2}{5} = \frac{14}{1} = 14 \text{ plots}$$

14. A bag contains 36 cups of flour. How many loaves of bread can be made if each loaf takes $5\frac{1}{3}$ cups? Is there any flour left over? If so, how much?

$$36 \div 5\frac{1}{3}$$

$$\frac{36}{1} \div \frac{16}{3} = \frac{36}{1} \times \frac{3}{16} = \frac{27}{4} = 6\frac{3}{4} \approx 6 \text{ full loaves}$$

$$6 \times 5\frac{1}{3} = \frac{6}{1} \times \frac{16}{3} = \frac{32}{1} = 32 \text{ cups used}$$

$$36 - 32 = 4 \text{ cups flour left}$$

15. A bag of fertilizer that weighs $18\frac{3}{4}$ pounds can cover 5000 square feet.

How many pounds of fertilizer will be needed to cover 27,000 square feet? How many bags of fertilizer are needed? Explain how you found your answer.

$$\frac{18\frac{3}{4} \text{ pounds}}{5000 \text{ sq. ft}} = \frac{3/800 \text{ pounds}}{1 \text{ sq. ft}} = \frac{101\frac{1}{4} \text{ pounds}}{27,000 \text{ sq. ft}}$$

$$18\frac{3}{4} \div 5000$$

$$\frac{75}{4} \div \frac{5000}{1}$$

$$3 \frac{75}{4} \times \frac{1}{5000} = \frac{3}{2000}$$

$$\frac{3}{800} \times \frac{27000}{1} = \frac{405}{4} = 101\frac{1}{4}$$

$$101\frac{1}{4} \div 18\frac{3}{4} = \frac{405}{4} \div \frac{75}{4} = \frac{405}{4} \times \frac{4}{75} = \frac{27}{5} = 5\frac{2}{5} \text{ bags}$$