



Name _____ Date _____

Dividing Fractions (Pages 312–314)

Dividing by 2 and multiplying by $\frac{1}{2}$ give the same result. Notice that 2 and $\frac{1}{2}$ are multiplicative inverses.

Dividing Fractions	To divide by a fraction, multiply by its multiplicative inverse. $\frac{a}{b} \div \frac{c}{d} = \frac{a}{b} \cdot \frac{d}{c}$, where $b, c, d \neq 0$
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EXAMPLES

A Find $18 \div \frac{2}{3}$.

Replace dividing by $\frac{2}{3}$ with multiplying by $\frac{3}{2}$.

$$18 \div \frac{2}{3} = \frac{18}{1} \cdot \frac{3}{2} = 27$$

B Find $3\frac{1}{2} \div -\frac{4}{5}$.

Replace dividing by $-\frac{4}{5}$ with multiplying by $-\frac{5}{4}$.

$$3\frac{1}{2} \div -\frac{4}{5} = \frac{7}{2} \cdot -\frac{5}{4} = -\frac{35}{8} \text{ or } -4\frac{3}{8}$$

Try These Together

1. Solve $11 \div 1\frac{5}{6} = p$.

HINT: First rename $1\frac{5}{6}$ as an improper fraction.

2. Solve $\frac{2}{7} \div \frac{4}{9} = d$.

HINT: Change dividing by $\frac{4}{9}$ to multiplying by the inverse of $\frac{4}{9}$.

PRACTICE

Solve each equation. Write the solution in simplest form.

3. $n = \frac{3}{4} \div (-12)$

4. $g = 3\frac{1}{4} \div \frac{1}{8}$

5. $-2\frac{2}{5} \div \left(-\frac{3}{10}\right) = s$

6. $\frac{5}{6} \div 4\frac{3}{4} = u$

7. $-2\frac{3}{5} \div \left(-\frac{1}{10}\right) = t$

8. $r = -9\frac{1}{3} \div 1\frac{5}{6}$

9. $c = -5\frac{1}{6} \div 1\frac{4}{9}$

10. $8\frac{1}{9} \div 2\frac{2}{3} = k$

11. $q = -4\frac{4}{5} \div \frac{7}{10}$

12. $\ell = 3\frac{1}{2} \div \frac{7}{8}$

13. $-7\frac{3}{7} \div -\frac{4}{7} = f$

14. $p = \frac{5}{8} \div 25$

15. **Interior Design** A hallway that is $4\frac{1}{2}$ feet across has hardwood floors lined with boards that are $2\frac{1}{4}$ inches wide. How many boards fit across the hallway?



16. **Standardized Test Practice** What is $16\frac{1}{4} \div -6\frac{1}{2}$?

A $-2\frac{1}{8}$

B $-2\frac{1}{6}$

C $-2\frac{1}{2}$

D $-2\frac{2}{3}$

Answers: 1. 6 2. $\frac{14}{9}$ 3. $-\frac{16}{1}$ 4. 26 5. 8 6. $\frac{57}{10}$ 7. 26 8. $-5\frac{11}{1}$ 9. $-3\frac{26}{15}$ 10. $3\frac{24}{1}$ 11. $-6\frac{7}{6}$ 12. 4 13. 13 14. $\frac{40}{1}$ 15. 24 16. C