

**Practice
5-2*****Multiplying Rational Numbers***

1. Is the product $-8 \cdot (-3)$ positive or negative?
2. Is the product $(-0.39)(-0.06)(0.29)$ positive or negative?
3. Find the product $-\frac{5}{6} \cdot \frac{1}{8}$.
4. Multiply $-2\frac{1}{2} \cdot -1\frac{2}{3}$.
5. Multiply $(-0.6)(-0.62)$.
6. A farmer has 140 bushels of wheat to sell at his roadside stand. He sells an average of $15\frac{3}{5}$ bushels each day. Represent the total change in the number of bushels he has for sale after 6 days.
7. a) **Writing** What is the sign of a^2b when $a = 5$ and $b = 8$?

b) Does the sign of the product depend on the sign of a , the sign of b , or the signs of both a and b ? Explain.
8. **Reasoning** What is the sign of the product $(-2)\left(\frac{1}{6}\right)(-7)$? Explain your reasoning.

9. **Error Analysis** Kyle incorrectly says that the product $-(-\frac{6}{7}) \cdot (-\frac{1}{11})$ is $\frac{6}{77}$.

a) What is the correct product?

b) What was Kyle's likely error?

- A. He found the product of two negative numbers and ignored the first negative sign.
- B. He multiplied the numerator and denominator wrong.
- C. He multiplied the numerators wrong.
- D. He multiplied the denominators wrong.

10. **Temperature** Suppose there is a 1.1°F drop in temperature for every thousand feet that an airplane climbs into the sky. If the temperature on the ground is 59.7°F , what will be the temperature when the plane reaches an altitude of 11,000 ft?

11. a) **Estimation** Estimate the product $(14.93)(-12.66)$ by rounding each factor to the nearest integer and multiplying.

b) Find the exact product.

12. Multiply $-7\frac{1}{2} \cdot 2\frac{3}{4}$.

13. Multiply $(-2.271)(16.47)$.

14. **Think About the Process**

a) What is the first step in finding the product $-4\frac{7}{8} \cdot (-2\frac{1}{2})$?

- A. Multiply the integers.
- B. Find the sign of the product.
- C. Multiply the fractions.
- D. Change the sign of the second factor.

b) Find the product $-4\frac{7}{8} \cdot (-2\frac{1}{2})$.

15. **Think About the Process** A ticket to see your favorite baseball team costs \$49.64. That price decreases by \$0.41 for every game lost during the regular season.

a) Which equation would be used to find the cost C of a ticket after L losses?

A. $C = 49.64 - 0.41L$

B. $C = 49.64 + 0.41L$

C. $C = \frac{49.64}{0.41L}$

D. $C = 49.64(0.41L)$

b) Represent the total change in the cost of a ticket after the team loses 31 games.

c) What is the price of a ticket after the team loses 31 games?

Practice 5-4

Dividing Rational Numbers

- Which of these is the reciprocal of $-\frac{14}{5}$?

<input type="radio"/> A. $\frac{5}{14}$	<input type="radio"/> C. $-\frac{14}{5}$
<input type="radio"/> B. $-\frac{5}{14}$	<input type="radio"/> D. $\frac{14}{5}$
- Find the reciprocal of $\frac{4}{7}$. Simplify your answer.
- Which multiplication expression is equivalent to the division expression $-\frac{7}{17} \div \frac{13}{34}$?

<input type="radio"/> A. $-\frac{17}{7} \times \frac{13}{34}$	<input type="radio"/> C. $-\frac{7}{17} \times \frac{13}{34}$
<input type="radio"/> B. $-\frac{17}{7} \times \frac{34}{13}$	<input type="radio"/> D. $-\frac{7}{17} \times \frac{34}{13}$
- Divide $\frac{5}{7} \div \left(-\frac{11}{5}\right)$ and simplify.
- Solve $-\frac{9}{2}y = \frac{27}{2}$ for y.
- The equation $d = \frac{2}{5}t$ describes the distance d, in yards, an object travels in t minutes. How long does it take the object to travel $1\frac{4}{5}$ yards?
- Writing** Which of the numbers $-\frac{7}{13}$, $1\frac{6}{7}$, $-1\frac{6}{7}$, and $\frac{7}{13}$ is the reciprocal of $1\frac{6}{7}$?
 - Which is the reciprocal of $\frac{7}{13}$?
 - What do you notice about the reciprocals of $1\frac{6}{7}$ and $\frac{7}{13}$? Explain.

8. a) **Reasoning** Find the reciprocal of $1\frac{1}{17}$.
- b) Find the reciprocal of $\frac{17}{18}$.
- c) Explain how finding the first reciprocal simplifies finding the second reciprocal.
9. a) **Error Analysis** Your friend says the quotient $\frac{3}{4} \div \frac{1}{4}$ is $\frac{1}{3}$. What is the correct quotient?
- b) What mistake did your friend likely make?
- A. Your friend multiplied with the reciprocal of the first fraction, not the second fraction.
- B. Your friend multiplied $\frac{4}{3} \times 4$.
- C. Your friend added the fractions instead of dividing.
- D. Your friend multiplied $\frac{3}{4} \times \frac{1}{4}$.
10. **Gardening** A certain plant grows $1\frac{2}{5}$ inches every week. How long will it take the plant to grow $4\frac{4}{5}$ inches?
- A. 3 weeks, 3 days
- B. 2 weeks, 3 days
- C. 3 weeks, 2 days
- D. 3 weeks, 3 days
11. **Open-Ended** Which multiplication expression is equivalent to $\frac{5}{8} \div \frac{1}{16}$?
- A. $\frac{8}{5} \times \frac{1}{16}$
- B. $\frac{5}{8} \times \frac{1}{16}$
- C. $\frac{5}{8} \times 16$
- D. $\frac{8}{5} \times 16$
12. Find the reciprocal of $-4\frac{7}{8}$.
13. Perform the indicated operation.
- $3\frac{1}{6} \div (-1\frac{4}{9})$

14. **Think About the Process** You want to write a multiplication expression equivalent to $-2\frac{1}{8} \div 6\frac{4}{5}$.

a) What is the first step?

- A. Find the reciprocal of the divisor.
- B. Find the reciprocal of the dividend.
- C. Multiply the numerators of the fractions.
- D. Write the mixed numbers as improper fractions.

b) Which multiplication expression is equivalent to $-2\frac{1}{8} \div 6\frac{4}{5}$?

- A. $-\frac{17}{8} \times \frac{34}{5}$
- B. $-\frac{8}{17} \times \frac{5}{34}$
- C. $-\frac{17}{8} \times \frac{5}{34}$
- D. $-\frac{8}{17} \times \frac{34}{5}$

15. **Think About the Process** To solve the equation $\frac{9}{5}m = \frac{3}{7}$ for m , the first step is to divide each side of the equation by $\frac{9}{5}$.

a) What is the next step?

- A. Find the reciprocal of $\frac{9}{5}$.
- B. Write $\frac{9}{5}$ as a mixed number.
- C. Multiply $\frac{9}{5} \times \frac{3}{7}$.
- D. Find the common denominator for $\frac{9}{5}$ and $\frac{3}{7}$.

b) What is the solution?