**Multiply. Write in simplest form.** (Examples 1–3)

1. $\frac{1}{2} \times 2\frac{3}{8} =$ $1\frac{3}{16}$

Show your work.

2. $1\frac{3}{4} \times 2\frac{4}{5} =$ $4\frac{9}{10}$

3. $1\frac{2}{3} \times 2\frac{4}{7} =$ $4\frac{2}{7}$

4. Melanie is training for a track meet. She ran $2\frac{1}{4}$ miles 5 times this week. How far did Melanie run this week? (Examples 4 and 5) $11\frac{1}{4}$ miles

5. **Building on the Essential Question** How do you multiply mixed numbers? Sample answer: To multiply mixed numbers, write the mixed numbers as improper fractions. Simplify, if possible, before multiplying. Then, multiply the numerators and multiply the denominators.

## Rate Yourself!

☐ I understand how to multiply mixed numbers.

Great! You're ready to move on!

☐ I still have some questions about multiplying mixed numbers.

No Problem! Go online to access a Personal Tutor. Tutor

FOLDABLES Time to update your Foldable!

# Independent Practice

Go online for Step-by-Step Solutions

**Multiply. Write in simplest form.** (Examples 1–3)

1. $\frac{1}{2} \times 2\frac{1}{3} = 1\frac{1}{6}$

2. $1\frac{7}{8} \times \frac{4}{5} = 1\frac{1}{2}$

3. $\frac{7}{8} \times 3\frac{1}{4} = 2\frac{27}{32}$

Show your work.

4. $1\frac{2}{3} \times 1\frac{1}{4} = 2\frac{1}{12}$

5. $3\frac{3}{4} \times 2\frac{2}{5} = 9$

6. $6\frac{2}{3} \times 3\frac{3}{10} = 22$

7. A carp can travel at a speed of $3\frac{7}{10}$ miles per hour. At this rate, how far can a carp travel in $2\frac{1}{2}$ hours? (Example 4)

$9\frac{1}{4}$ mi

8. Juliette is making fruit salad. She purchased $9\frac{2}{3}$ ounces each of 6 different fruits. How many ounces of fruit did she purchase? (Example 5)

58 ounces

**7** A carp can travel at a speed of $3\frac{7}{10}$ miles per hour. At this rate, how far can a carp travel in $2\frac{1}{2}$ hours? (Example 4)

**$9\frac{1}{4}$ mi**

**8.** Juliette is making fruit salad. She purchased $9\frac{2}{3}$ ounces each of 6 different fruits. How many ounces of fruit did she purchase? (Example 5)

**58 ounces**

**9** A waffle recipe calls for $2\frac{1}{4}$ cups of flour. If Chun wants to make $1\frac{1}{2}$ times the recipe, how much flour does he need? (Example 4)

**$3\frac{3}{8}$ c**

**10.** CCSS **Model with Mathematics** Use the formula $d = rt$ to find the distance $d$ a long-distance runner can run at a rate $r$ of $9\frac{1}{2}$ miles per hour for time $t$ of $1\frac{3}{4}$ hours.

**$16\frac{5}{8}$ mi**

**11.** STEM Earth is about $92\frac{9}{10}$ million miles from the Sun. Use the table shown.

**a.** How far is Venus from the Sun? **about $69\frac{27}{40}$ million mi**

**b.** How far is Mars from the Sun? **about $139\frac{7}{20}$ million mi**

**c.** How far is Jupiter from the Sun? **about $487\frac{29}{40}$ million mi**

**d.** How far is Saturn from the Sun? **about $882\frac{11}{20}$ million mi**

| Planet | Approximate Number of Times as Far from the Sun as Earth |
|---|---|
| Venus | $\frac{3}{4}$ |
| Mars | $1\frac{1}{2}$ |
| Jupiter | $5\frac{1}{4}$ |

**Multiply. Write in simplest form.**

**12.** $\frac{3}{4} \times 2\frac{1}{2} \times \frac{4}{5} =$ $1\frac{1}{2}$

**13.** $\frac{1}{7} \times 5\frac{5}{6} \times 1\frac{1}{4} =$ $1\frac{1}{24}$

## H.O.T. Problems Higher Order Thinking

**14.** **Persevere with Problems** Analyze each product in the table. **Sample answers provided.**

| First Factor | | Second Factor | | Product |
|---|---|---|---|---|
| $\frac{1}{2}$ | × | $\frac{3}{4}$ | = | $\frac{3}{8}$ |
| 1 | × | $\frac{3}{4}$ | = | $\frac{3}{4}$ |
| $\frac{3}{2}$ | × | $\frac{3}{4}$ | = | $\frac{9}{8}$ |

**a.** Why is the first product less than $\frac{3}{4}$?

**The first product is less than $\frac{3}{4}$ because the first factor is less than one. You only want a part of a whole, so the product is less than the second factor.**

**b.** Why is the second product equal to $\frac{3}{4}$?

**The second product is equal to the second factor because of the Identity Property. The product of any number and one is that number.**

**c.** Why is the third product greater than $\frac{3}{4}$?

**The third product is greater than the second factor because the first factor is greater than one. So, the product is greater than $\frac{3}{4}$.**

**d.** Based on your observations, make a conjecture about the product when one of the factors is a number less than 1.

**Sample answer: When one of the factors is less than one, the product will be less than the other factor.**

**15.** CCSS **Use Math Tools** Without multiplying, determine whether the product of $2\frac{1}{2} \times \frac{2}{3}$ is located on the number line at point *A*, *B*, or *C*. Explain your reasoning.


**B; the product must be greater than $\frac{2}{3}$ and less than $2\frac{1}{2}$.**

**16.** CCSS **Model with Mathematics** Give two examples of mixed numbers that when multiplied by $\frac{3}{4}$ give a product between $\frac{3}{4}$ and 1.

**Sample answer: $1\frac{1}{4}$ and $1\frac{1}{15}$**