



## Additional Practice 8-7

### Multiply Mixed Numbers

#### Another Look!

Millwood City is constructing a new highway through town. The construction crew can complete  $5\frac{3}{5}$  miles of road each month. How many miles will they complete in  $6\frac{1}{2}$  months?

#### Step 1

Round the mixed numbers to whole numbers to estimate the product.

$$\begin{array}{r} 5\frac{3}{5} \times 6\frac{1}{2} \\ \downarrow \quad \downarrow \\ 6 \times 7 = 42 \end{array}$$

So, they can complete about 42 miles.

#### Step 2

Rename the mixed numbers.

$$5\frac{3}{5} \times 6\frac{1}{2} = \frac{28}{5} \times \frac{13}{2}$$

#### Step 3

Multiply the numerators and the denominators.

$$\frac{28}{5} \times \frac{13}{2} = \frac{364}{10} = 36\frac{2}{5}$$

The construction crew will complete  $36\frac{2}{5}$  miles of highway in  $6\frac{1}{2}$  months.

#### Step 4

Check for reasonableness.

Compare your product to your estimate.

$36\frac{2}{5}$  is close to 42, so the answer is reasonable.

In 1–4, estimate the product. Then complete the multiplication.

Sample estimates are given.

$$1. \quad 1\frac{1}{4} \times 2\frac{1}{4} = \frac{5}{4} \times \frac{9}{4} = \frac{5 \times 9}{4 \times 4} = \frac{45}{16} = 2\frac{13}{16}$$

$$2. \quad 3\frac{1}{2} \times 2\frac{2}{3} = \frac{7}{2} \times \frac{8}{3} = \frac{7 \times 8}{2 \times 3} = \frac{56}{6} = 9\frac{1}{3}$$

$$3. \quad 5\frac{1}{3} \times 2\frac{3}{4} = \frac{16}{3} \times \frac{11}{4} = 14\frac{2}{3}$$

$$4. \quad 4\frac{1}{5} \times 2\frac{1}{4} = \frac{21}{5} \times \frac{9}{4} = 9\frac{9}{20}$$

In 5–12, estimate the product. Then find each product.

Sample estimates are given.

$$5. \quad 4 \times 6\frac{1}{4}$$

24; 25

$$6. \quad 3\frac{2}{3} \times 2\frac{3}{4}$$

12;  $10\frac{1}{12}$

$$7. \quad \frac{7}{8} \times 4\frac{1}{6}$$

4;  $3\frac{31}{48}$

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

6;  $4\frac{1}{8}$

$$9. \quad 8\frac{1}{10} \times \frac{2}{3}$$

8;  $5\frac{2}{5}$

$$10. \quad 4\frac{1}{12} \times 7$$

28;  $28\frac{7}{12}$

$$11. \quad 3\frac{4}{5} \times 7\frac{1}{2}$$

32;  $28\frac{1}{2}$

$$12. \quad 6\frac{2}{3} \times 4\frac{4}{5}$$

35; 32



13. How can you use estimation to find  $9\frac{1}{2} + 9\frac{1}{2} + 9\frac{1}{2} + 9\frac{1}{2} + 9\frac{1}{2}$ ? **Sample answer:**  
**Multiply  $5 \times 10 = 50$**

14. A model of a house is built on a base that measures  $7\frac{3}{4}$  in. wide and  $9\frac{1}{5}$  in. long. What is the area of the model house's base?  **$71\frac{3}{10}$  sq in.**

15. **Algebra** Write a mixed number for  $t$  so that  $2\frac{3}{4} \times t$  is more than  $2\frac{3}{4}$ .

**Answers will vary. Any mixed number greater than 1 will work.**

16. **Vocabulary** Give an example of a benchmark fraction and an example of a mixed number.

**Sample answer:  $\frac{1}{2}$ ;  $3\frac{1}{2}$**

17. **Make Sense and Persevere** Leon and Marisol biked the Brookside Trail to the end and back. Then they biked the Forest Glen Trail to the end and back before stopping to eat. How far did they bike before they stopped to eat?

**$12\frac{1}{3}$  miles**



18. The One World Trade Center in New York City is about  $3\frac{1}{5}$  times as tall as the Washington Monument in Washington, D.C. The Washington Monument is 555 feet tall. About how tall is the One World Trade Center?

**1,776 feet**

19. **Higher Order Thinking** Lucie can walk about  $3\frac{4}{5}$  miles each hour. About how far can she walk in 2 hours 45 minutes?

**$10\frac{9}{20}$  miles**

### Assessment Practice

20. Choose all that are true.

- ☒  $\frac{1}{4} \times 1\frac{7}{8} = \frac{15}{32}$   
☐  $2\frac{1}{2} \times 2\frac{1}{2} = 5\frac{1}{2}$   
☐  $3\frac{1}{5} \times 2\frac{1}{4} = 6\frac{2}{5}$   
☒  $4\frac{1}{2} \times 1\frac{1}{3} = 6$   
☒  $5\frac{1}{4} \times \frac{1}{2} = 2\frac{5}{8}$

21. Choose all that are true.

- ☒  $4\frac{1}{12} \times \frac{3}{4} = \frac{49}{16}$   
☒  $8\frac{5}{6} \times 2 = 17\frac{2}{3}$   
☒  $5\frac{1}{2} \times 5\frac{1}{2} = 30\frac{1}{4}$   
☐  $9\frac{1}{5} \times \frac{3}{5} = 9\frac{4}{5}$   
☐  $6\frac{3}{4} \times 3\frac{1}{4} = 19$