Do You Understand?

1. **Essential Question** How can you divide with mixed numbers?

2. **Generalize** When dividing mixed numbers, why is it important to estimate the quotient first?

3. **Reasoning** In Example 1, how many long bumper stickers can Damon fit side by side on his car bumper? Will there be uncovered space? Explain.

4. What is the difference between dividing fractions less than 1 and dividing mixed numbers?

Do You Know How?

In 5–13, find each quotient.

5. $2\frac{5}{8} \div 2\frac{1}{4} = \frac{21}{8} \div \boxed{}$

$= \frac{21}{8} \times \boxed{}$

$= \boxed{}$

6. $3 \div 4\frac{1}{2}$

7. $18 \div 3\frac{2}{3}$

8. $1\frac{2}{5} \div 7$

9. $5 \div 6\frac{2}{5}$

10. $8\frac{1}{5} \div 3\frac{3}{4}$

11. $2\frac{1}{2} \div 4\frac{1}{10}$

12. $2\frac{2}{3} \div 6$

13. $6\frac{5}{9} \div 1\frac{7}{9}$

Practice & Problem Solving

Leveled Practice In **14–25**, find each quotient.

14. $10 \div 2\frac{1}{4} = \frac{10}{1} \div \boxed{}$

$= \frac{10}{1} \times \boxed{}$

$= \boxed{} \; \boxed{}$

15. $9\frac{1}{3} \div 6 = \frac{28}{3} \div \boxed{}$

$= \frac{28}{3} \times \boxed{}$

$= \boxed{}$

16. $1\frac{3}{8} \div 4\frac{1}{8} = \frac{11}{8} \div \boxed{}$

$= \frac{11}{8} \times \boxed{}$

$= \boxed{}$

17. $2\frac{2}{3} \div 8 = \frac{8}{3} \div \boxed{}$

$= \boxed{} \times \boxed{}$

$= \boxed{}$

18. $4\frac{1}{3} \div 3\frac{1}{4} = \frac{13}{3} \div \boxed{}$

$= \boxed{} \times \boxed{}$

$= \boxed{}$

19. $1 \div 8\frac{5}{9} = \frac{1}{1} \div \boxed{}$

$= \boxed{} \times \boxed{}$

$= \boxed{}$

20. $3\frac{5}{6} \div 9\frac{5}{6}$

$\underline{}$

21. $16 \div 2\frac{2}{3}$

$\underline{}$

22. $2\frac{5}{8} \div 13$

$\underline{}$

23. $3\frac{6}{7} \div 6\frac{3}{4}$

$\underline{}$

24. $2\frac{1}{3} \div 1\frac{1}{3}$

$\underline{}$

25. $3\frac{3}{4} \div 1\frac{1}{2}$

$\underline{}$

26. Beth is making a rope ladder. Each step of the ladder is $2\frac{1}{3}$ feet wide. Beth has a rope that is 21 feet long. How many steps can she make from the rope?
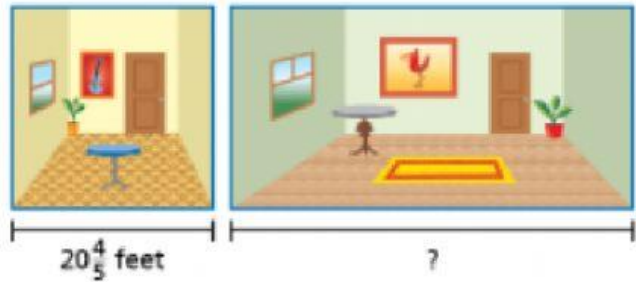
←$2\frac{1}{3}$ ft→
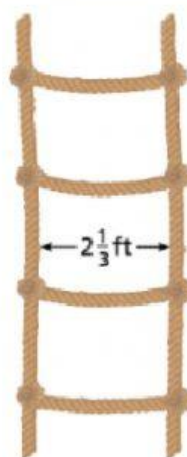
27. The area of this rectangle is $257\frac{1}{4}$ in.² Find side length w.

$257\frac{1}{4}$ in.² $10\frac{1}{2}$ in.

w

$\underline{}$
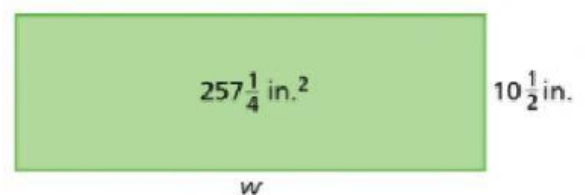
In **28** and **29**, use the picture.

28. The larger room is twice as long as the smaller room. How long is the larger room?

_____

29. If the length of the smaller room is divided into 4 equal parts, how long is each part?

_____

$20\frac{4}{5}$ feet   ?

30. **Make Sense and Persevere** Luis has 3 pounds of ground turkey to make turkey burgers. He uses $\frac{3}{8}$ pound per burger to make 6 burgers. How many $\frac{1}{4}$-pound burgers can Luis make with the remaining turkey?

_____

31. **Higher Order Thinking** If $9 \times \frac{n}{5} = 9 \div \frac{n}{5}$, then what does n equal? Explain.

32. Margaret uses $1\frac{3}{4}$ teaspoons of key lime zest to make 12 key lime cupcakes. She wants to make 30 cupcakes. How much key lime zest will Margaret use?

_____

33. **Use Structure** A gem store in Fort Lauderdale received a shipment of $1\frac{1}{2}$ pounds of moonstone crystals. If these moonstone crystals were separated into 6 equal bags, how much would each bag weigh?

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34. The owner of an aquatic store used $17\frac{1}{2}$ gallons of water to fill aquariums. He put $5\frac{5}{6}$ gallons of water in each aquarium. How many aquariums did he fill?

35. Write an explanation to a friend about how you would estimate $17\frac{1}{5} \div 3\frac{4}{5}$.