Name _____

Practice Video Tools Games

Additional Practice 9-6
Divide Whole Numbers and Unit Fractions

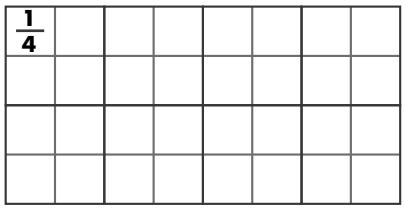
Another Look!

Find $8 \div \frac{1}{4}$.

You can use an area model to solve the problem.

First, draw a rectangle and divide it into 8 equal parts to represent 8 wholes.

Then use another color to divide each of the 8 parts into fourths and count the total number of fraction parts.



There are 32 small squares, so you know that $8 \div \frac{1}{4} = 32$.

Find $\frac{1}{4} \div 8$.

You can also divide unit fractions by whole numbers.

Think: the quotient times the divisor must equal the dividend.

What times 8 equals $\frac{1}{4}$?

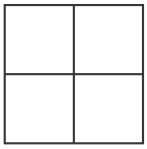
$\frac{1}{32} \times 8 = \frac{1}{4}$

So, $\frac{1}{4} \div 8 = \frac{1}{32}$.

In **1–12**, find each quotient. Use a number line or model to help.

1. $6 \div \frac{1}{2}$ **12**

2. $4 \div \frac{1}{4}$ **16**



3. $5 \div \frac{1}{3}$ **15**

4. $\frac{1}{2} \div 6$ **$\frac{1}{12}$**

5. $\frac{1}{5} \div 2$ **$\frac{1}{10}$**

6. $\frac{1}{8} \div 3$ **$\frac{1}{24}$**

7. $\frac{1}{7} \div 8$ **$\frac{1}{56}$**

8. $5 \div \frac{1}{5}$ **25**

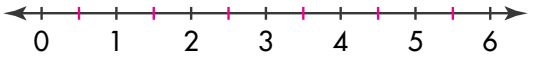
9. $\frac{1}{3} \div 9$ **$\frac{1}{27}$**

10. $\frac{1}{4} \div 8$ **$\frac{1}{32}$**

11. $6 \div \frac{1}{7}$ **42**

12. $\frac{1}{6} \div 5$ **$\frac{1}{30}$**

13. Cynthia has a piece of wood that is 6 feet long. She cuts it into $\frac{1}{2}$-foot pieces. How many pieces does she have? Use the number line to help you solve the problem.



12 pieces

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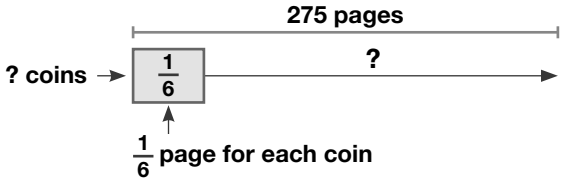
14. Gregg has a coin collection album with 275 pages. Each coin is displayed on $\frac{1}{6}$ of a page. How many coins will fit in the album?



1,650 coins

15. **enVision®** STEM Suppose a wind turbine requires $\frac{1}{6}$ square mile of land. How many turbines can be built on 8 square miles of land?

48 wind turbines

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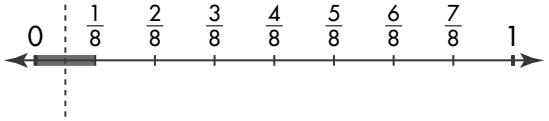
16. **Reasoning** Meredith modeled a division problem on the number line. What division problem did she model? Find the quotient.



$\frac{1}{8} \div 2; \frac{1}{16}$

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17. **Higher Order Thinking** Millie has 5 yards of blue fabric and 7 yards of pink fabric. How many quilt squares can she make with the fabric she has if both colors are needed to make one square? Explain your reasoning.

DATA

Amount of Fabric Needed for One Quilt Square	
Fabric Color	**Amount Needed**
Blue	$\frac{1}{4}$ yard
Pink	$\frac{1}{3}$ yard

20 quilt squares; Sample answer: She has enough blue fabric to make $5 \div \frac{1}{4}$, or 20 quilt squares. She has enough pink fabric to make $7 \div \frac{1}{3}$, or 21 quilt squares. Since $20 < 21$, Millie can only make 20 quilt squares.

Assessment Practice

18. Cindy says that $\frac{1}{4} \div 12 = 3$. Is she correct? If not, justify your reasoning and give the correct quotient.

No; Sample answer: Cindy's equation shows $\frac{1}{4}$ partitioned into 12 parts. The correct answer to her equation is $\frac{1}{48}$.