

Model Division

Match each question with the correct model. Then complete the division sentence.

1. What is 4 divided by $\frac{1}{3}$?
 $4 \div \frac{1}{3} = \square$

A

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2. What is 4 divided by $\frac{1}{5}$?
 $4 \div \frac{1}{5} = \square$

B

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3. What is 4 divided by $\frac{1}{2}$?
 $4 \div \frac{1}{2} = \square$

C

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Complete each division or multiplication to find a and b .

Use fraction strips or grid paper for help.

4. $6 \div \frac{1}{3} = a$ $6 \times 3 = b$ _____

5. $7 \div \frac{1}{5} = a$ $7 \times 5 = b$ _____

6. $8 \div \frac{1}{4} = a$ $8 \times 4 = b$ _____

7. $2 \div \frac{1}{6} = a$ $2 \times 6 = b$ _____

Use your answers from Exercises 4–7 to answer Exercise 8–9.

8. What is a unit fraction?

9. What rule can you write about dividing a whole number by a unit fraction?

Divide. Check your answers.

10. $\frac{5}{6} \div \frac{1}{6}$ _____

11. $\frac{4}{5} \div \frac{1}{5}$ _____

12. $\frac{3}{7} \div \frac{1}{7}$ _____

13. $\frac{3}{8} \div \frac{1}{8}$ _____

14. $\frac{2}{7} \div \frac{1}{7}$ _____

15. $\frac{1}{2} \div \frac{1}{2}$ _____

16. $\frac{4}{6} \div \frac{2}{6}$ _____

17. $\frac{6}{9} \div \frac{3}{9}$ _____

18. $\frac{8}{12} \div \frac{4}{12}$ _____

19. $\frac{6}{10} \div \frac{2}{10}$ _____

20. $\frac{4}{5} \div \frac{3}{15}$ _____

21. $\frac{2}{3} \div \frac{3}{9}$ _____

Test Prep22. Find $\frac{6}{7} \div \frac{1}{7}$. Explain how you found your answer.

23. Beth had 4 feet of rope. She divided each foot into pieces that measured $\frac{1}{4}$ of a foot. How many sections of rope did she then have?



A $\frac{1}{16}$

C 4

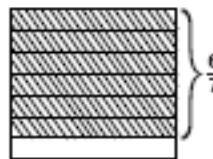
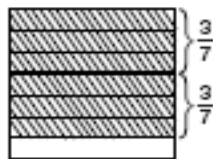
B 8

D 16

Model DivisionFind $4 \div \frac{1}{3}$.

Step 1: Draw a model that shows 4 whole units. Divide each whole unit into thirds.	
Step 2: Count the sections to find how many thirds are in 4 wholes. $4 \div \frac{1}{3} = 12$	

Find $\frac{6}{7} \div \frac{3}{7}$.

Step 1: Model $\frac{6}{7}$ 	Step 2: Find how many sets of $\frac{3}{7}$ are in $\frac{6}{7}$. What is $\frac{3}{7} \div \frac{6}{7}$? $\frac{1}{2}$	
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Match each question with the correct model. Then complete the division sentence.

1. What is 2 divided by $\frac{1}{3}$? $2 \div \frac{1}{3} =$ _____



2. What is 2 divided by $\frac{1}{4}$? $2 \div \frac{1}{4} =$ _____



3. What is 2 divided by $\frac{1}{5}$? $2 \div \frac{1}{5} =$ _____

Complete each division and multiplication to find a and b .
Use fraction strips or grid paper for help.

4. $6 \div \frac{1}{3} = a$

$6 \times 3 = b$

5. $9 \div \frac{1}{4} = a$

$9 \times 4 = b$

Use your answers from Problems 4 and 5 to answer Problems 6 and 7.

6. What is true about a and b in each problem? _____

7. To divide a whole number by a unit fraction, you can multiply the whole number by _____.

Name _____ Date _____

**Problem
Solving
12.4**

Model Division

Use models to solve Problems 1–5.

Show Your Work

1. One period in a hockey game is 20 minutes. Each period makes up $\frac{1}{3}$ of the game. How many minutes long is the game?

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2. Twenty minutes of playing time makes up $\frac{1}{2}$ of a NCAA women's basketball game. How many minutes long is a game?

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3. If you divide $\frac{1}{4}$ of a dollar into parts that are $\frac{1}{20}$ of a dollar, how many parts are there? What are they called?

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4. Manny said that $8 \div \frac{1}{4}$ is equal to $\frac{1}{8} \times 4$. Explain what Manny's mistake was. Then tell the correct answer.

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5. Can the quotient of two fractions be less than 1? Explain and include an example.
