



Additional Practice 9-4

Divide Whole Numbers by Unit Fractions

Another Look!

Ned has a 2-foot-long piece of rope. He cuts the rope into $\frac{1}{3}$ -foot pieces. How many pieces of rope does Ned have now?

Think: How many $\frac{1}{3}$ s are in 2? Use a model or a number line to help.



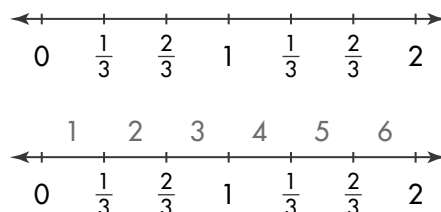
Count how many $\frac{1}{3}$ s there are in 2. There are three $\frac{1}{3}$ s in 1, so there are six $\frac{1}{3}$ s in 2.

$$2 \div \frac{1}{3} = 6$$

You can use multiplication to check your answer.

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

Ned has 6 pieces of rope.



In **1** and **2**, use the picture to find each quotient.



1. How many $\frac{1}{5}$ s are in 1? **5**

$$1 \div \frac{1}{5} = \underline{5}$$

2. How many $\frac{1}{5}$ s are in 4? **20**

$$4 \div \frac{1}{5} = \underline{20}$$

In **3–10**, find each quotient. You may draw a picture or use a number line to help.

3. $12 \div \frac{1}{2} = \underline{24}$

4. $9 \div \frac{1}{4} = \underline{36}$

5. $3 \div \frac{1}{7} = \underline{21}$

6. $10 \div \frac{1}{10} = \underline{100}$

7. $20 \div \frac{1}{3} = \underline{60}$

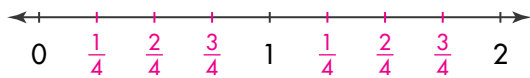
8. $7 \div \frac{1}{5} = \underline{35}$

9. $6 \div \frac{1}{6} = \underline{36}$

10. $15 \div \frac{1}{2} = \underline{30}$



11. Use the number line. How many $\frac{1}{4}$ -yard long pieces of pipe can be cut from two 1-yard long pieces of pipe?



8 pieces

12. **Vocabulary** Define a unit fraction and then give an example.

Sample answer: A unit fraction has a one in the numerator. $\frac{1}{3}$

13. Built in 2005, the world's largest leather work boot is 16 feet tall. A typical men's work boot is $\frac{1}{2}$ foot tall. How many times as tall as a typical work boot is the largest boot?

32 times as tall

14. **Higher Order Thinking** When you divide a whole number by a unit fraction, explain how you can find the quotient.

Sample explanation: You can multiply the whole number by the denominator of the unit fraction.

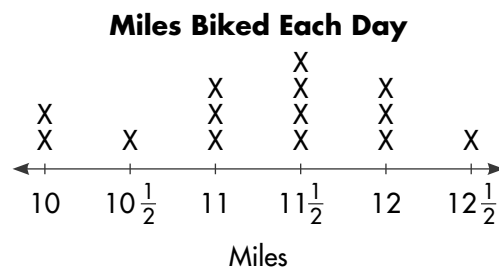
15. **Number Sense** Look for a pattern in the table. Find the missing addends and sums.

Addends	$\frac{1}{8} + \frac{1}{4}$	$\frac{1}{4} + \frac{1}{4}$	$\frac{3}{8} + \frac{1}{4}$	$\frac{1}{2} + \frac{1}{4}$
Sum	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$

16. **Make Sense and Persevere**

David made a line plot of how many miles he biked each day for two weeks. How many miles did he bike in all?

158 miles



Assessment Practice

17. Omar has 8 cups of cornmeal. How many batches of corn muffins can he make?

- (A) 4 batches
- (B) 6 batches
- (C) 16 batches
- (D) 32 batches

Cornmeal Recipes	
Item	Amount Needed
Cornbread	$\frac{3}{4}$ cup per loaf
Corn Muffins	$\frac{1}{2}$ cup per batch
Hush Puppies	$\frac{5}{8}$ cup per batch