Dividing Whole Numbers by Unit Fractions

Grade 5 Math • Section 6.2

Name: _____	Date: _____	Score: _____ / 17

Quick Review and Helpful Hints

Rule: $c \div \frac{1}{b} = c \times b$. Dividing by a unit fraction is the same as multiplying by its denominator.

Think: "How many $\frac{1}{b}$-sized pieces fit into c?" $3 \div \frac{1}{4}$: how many fourths in 3 wholes? $3 \times 4 = 12$.

The answer is **larger** than the starting number.

Example: Find $5 \div \frac{1}{3}$.

How many $\frac{1}{3}$-sized pieces fit into 5 wholes? $5 \times 3 = 15$. So $5 \div \frac{1}{3} = 15$.

Answer: 15

Practice Problems

Divide.

1. $2 \div \frac{1}{3} =$ _____

2. $4 \div \frac{1}{5} =$ _____

3. $3 \div \frac{1}{4} =$ _____

4. $6 \div \frac{1}{2} =$ _____

5. $7 \div \frac{1}{6} =$ _____

6. $8 \div \frac{1}{3} =$ _____

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

8. $10 \div \frac{1}{4} =$ _____

9. $9 \div \frac{1}{5} =$ _____

10. $1 \div \frac{1}{7} =$ _____

11. $4 \div \frac{1}{10} =$ _____

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

13. $6 \div \frac{1}{8} =$ _____

14. $3 \div \frac{1}{6} =$ _____

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

Word Problems

16. A board is 6 feet long. It is cut into pieces that are each $\frac{1}{4}$ foot long. How many pieces are there?

_____

17. A container holds 3 gallons of juice. Cups hold $\frac{1}{8}$ gallon each. How many cups can be filled?

_____

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Answer Keys

1. $\boxed{6}$
2. $\boxed{20}$
3. $\boxed{12}$
4. $\boxed{12}$
5. $\boxed{42}$
6. $\boxed{24}$
7. $\boxed{40}$
8. $\boxed{40}$
9. $\boxed{45}$
10. $\boxed{7}$
11. $\boxed{40}$
12. $\boxed{36}$
13. $\boxed{48}$
14. $\boxed{18}$
15. $\boxed{30}$
16. $\boxed{24}$
17. $\boxed{24}$

Step-by-Step Explanations

1. Start with the main idea. For dividing whole numbers by unit fractions, divide by multiplying by the reciprocal, then simplify. The result is 6. Fractions are easier to combine when the pieces are the same size.

2. Keep the work tidy. For dividing whole numbers by unit fractions, divide by multiplying by the reciprocal, then simplify. The result is 20. Always simplify at the end so the answer is clean and useful.

3. Look at what the numbers mean. For dividing whole numbers by unit fractions, divide by multiplying by the reciprocal, then simplify. The result is 12. For mixed numbers, converting to improper fractions can make the arithmetic calmer.

4. Use the setup first. For dividing whole numbers by unit fractions, divide by multiplying by the reciprocal, then simplify. The result is 12. Fractions are easier to combine when the pieces are the same size.

5. Check the size of the answer. For dividing whole numbers by unit fractions, divide by multiplying by the reciprocal, then simplify. The result is 42. Always simplify at the end so the answer is clean and useful.

6. Match the operation to the words. For dividing whole numbers by unit fractions, divide by multiplying by the reciprocal, then simplify. The result is 24. For mixed numbers, converting to improper fractions can make the arithmetic calmer.

7. Write the important values first. For dividing whole numbers by unit fractions, divide by multiplying by the reciprocal, then simplify. The result is 40. Fractions are easier to combine when the pieces are the same size.

8. Follow the pattern carefully. For dividing whole numbers by unit fractions, divide by multiplying by the reciprocal, then simplify. The result is 40. Always simplify at the end so the answer is clean and useful.

9. Start with the main idea. For dividing whole numbers by unit fractions, divide by multiplying by the reciprocal, then simplify. The result is 45. For mixed numbers, converting to improper fractions can make the arithmetic calmer.

10. Keep the work tidy. For dividing whole numbers by unit fractions, divide by multiplying by the reciprocal, then simplify. The result is 7. Fractions are easier to combine when the pieces are the same size.

11. Look at what the numbers mean. For dividing whole numbers by unit fractions, divide by multiplying by the reciprocal, then simplify. The result is 40. Always simplify at the end so the answer is clean and useful.

12. Use the setup first. For dividing whole numbers by unit fractions, divide by multiplying by the reciprocal, then simplify. The result is 36. For mixed numbers, converting to improper fractions can make the arithmetic calmer.

13. Check the size of the answer. For dividing whole numbers by unit fractions, divide by multiplying by the reciprocal, then simplify. The result is 48. Fractions are easier to combine when the pieces are the same size.

14. Match the operation to the words. For dividing whole numbers by unit fractions, divide by multiplying by the reciprocal, then simplify. The result is 18. Always simplify at the end so the answer is clean and useful.

15. Write the important values first. For dividing whole numbers by unit fractions, divide by multiplying by the reciprocal, then simplify. The result is 30. For mixed numbers, converting to improper fractions can make the arithmetic calmer.

16. Follow the pattern carefully. For dividing whole numbers by unit fractions, each piece is $\frac{1}{4}$ foot, so $6 \div \frac{1}{4} = 6 \times 4 = 24$. Fractions are easier to combine when the pieces are the same size.

17. Start with the main idea. For dividing whole numbers by unit fractions, each cup is $\frac{1}{8}$ gallon, so $3 \div \frac{1}{8} = 3 \times 8 = 24$ cups. Always simplify at the end so the answer is clean and useful.

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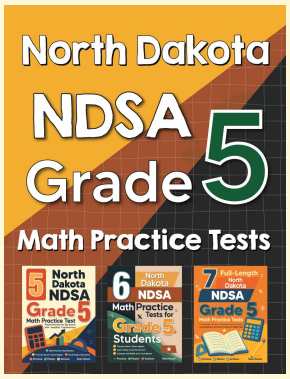

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