

Whole Numbers as Fractions

Every whole number is secretly a fraction. 3 can be written as $\frac{3}{1}$. And 1 can be written as $\frac{2}{2}$, $\frac{4}{4}$, $\frac{8}{8}$, or any “same over same.”

| Rule | Example |
|---|---------------------------------|
| $n = \frac{n}{1}$ (any whole over 1) | $5 = \frac{5}{1}$ |
| $1 = \frac{b}{b}$ when $b \neq 0$ | $1 = \frac{4}{4} = \frac{8}{8}$ |
| n as b ths = $\frac{n \times b}{b}$ | 3 as fourths = $\frac{12}{4}$ |



$$\text{three wholes} = 3 = \frac{3}{1}$$

Key Concepts

- Every whole number can be written as a fraction with denominator 1. So $3 = \frac{3}{1}$, $7 = \frac{7}{1}$, $1 = \frac{1}{1}$.
- The number 1 can be written as a fraction in many ways. As long as the numerator equals the denominator, the fraction equals 1: $\frac{2}{2} = \frac{4}{4} = \frac{6}{6} = 1$.
- To write a whole number n as a fraction with denominator b , multiply: $n = \frac{n \times b}{b}$. For example, 2 as halves is $\frac{4}{2}$ (because $2 \times 2 = 4$ halves make 2 wholes).
- Whole numbers on a number line line up exactly where fractions with matching numerators land: $\frac{4}{4}$ sits at 1, $\frac{8}{4}$ sits at 2, $\frac{12}{4}$ sits at 3.


Worked Examples

① Write 4 as a fraction with denominator 1.

 Any whole number is itself over 1. So $4 = \frac{4}{1}$. Read it as “four ones,” which is just 4.

 **Answer:** $\frac{4}{1}$

② Write 1 as a fraction with denominator 6.

 We want a fraction equal to 1 with 6 on the bottom. As long as the top and bottom match, the fraction equals 1. So $1 = \frac{6}{6}$. (Picture 6 sixths of a pie: they make a whole pie.)

 **Answer:** $\frac{6}{6}$

③ Write 3 as a fraction with denominator 4.

 We want a fraction equal to 3 with 4 on the bottom. Multiply 3 by 4 to get the numerator: $3 \times 4 = 12$. So $3 = \frac{12}{4}$. (Picture 3 whole pies, each cut into 4 slices: 12 slices total.)

 **Answer:** $\frac{12}{4}$

Practice Problems

Write each whole number as a fraction with the given denominator.

1. Write 5 as a fraction with denominator 1

2. Write 2 as a fraction with denominator 2

3. Write 1 as a fraction with denominator 4

4. Write 1 as a fraction with denominator 8

5. Write 3 as a fraction with denominator 2

6. Write 4 as a fraction with denominator 3

7. Write 2 as a fraction with denominator 4

8. Write 5 as a fraction with denominator 2


9. $\frac{6}{6} = ?$


10. $\frac{10}{2} = ?$


11. $\frac{8}{4} = ?$

12. $\frac{15}{3} = ?$

Study Tips

 Whenever you see a whole number alone, you can pretend there is a “/1” under it. 7 is the same as $\frac{7}{1}$.

 To turn a whole number into a fraction with denominator b , multiply the whole number by b to find the numerator.

 Use number-line pictures. The whole numbers 0, 1, 2, 3, ... sit at the same places as $\frac{0}{b}, \frac{b}{b}, \frac{2b}{b}, \frac{3b}{b}, \dots$

Word Problems

1. Maya cut 2 whole oranges into halves. How many half-orange pieces does she have? Write your answer as a fraction.

Answer: _____

2. Carlos finished one whole worksheet. His teacher records it as a fraction in eighths. What fraction did Carlos finish?

Answer: _____

Answer Key — with Friendly Explanations

Practice Problems

1. Any whole is itself over 1.

 Answer: $\frac{5}{1}$

2. 2 wholes is $2 \times 2 = 4$ halves.

 Answer: $\frac{4}{2}$

3. 1 whole is 4 fourths.

 Answer: $\frac{4}{4}$

4. 1 whole is 8 eighths.

 Answer: $\frac{8}{8}$

5. 3 wholes is $3 \times 2 = 6$ halves.

 Answer: $\frac{6}{2}$

6. 4 wholes is $4 \times 3 = 12$ thirds.

 Answer: $\frac{12}{3}$

7. 2 wholes is $2 \times 4 = 8$ fourths.

 Answer: $\frac{8}{4}$

8. 5 wholes is $5 \times 2 = 10$ halves.

 Answer: $\frac{10}{2}$

9. Same on top and bottom = 1.

 Answer: 1

10. $10 \div 2 = 5$. Ten halves make 5 wholes.

 Answer: 5

11. $8 \div 4 = 2$. Eight fourths make 2 wholes.

 Answer: 2

12. $15 \div 3 = 5$. Fifteen thirds make 5 wholes.

 Answer: 5

Word Problems

1. $2 \times 2 = 4$ half-pieces. As a fraction: $\frac{4}{2}$.

 Answer: $\frac{4}{2}$ half-orange pieces

2. 1 whole worksheet equals $\frac{8}{8}$ in eighths.

 Answer: $\frac{8}{8}$

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