

## 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 = $\frac{12}{4}$



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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