

# Equivalent Fractions

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Score: \_\_\_\_\_ / 24

## Quick Review

Two fractions are **equivalent** when they name the same amount, even though they look different. For example,  $\frac{1}{2}$  and  $\frac{2}{4}$  cover the same part of a whole. To build an equivalent fraction, **multiply** the top number (numerator) and the bottom number (denominator) by the same number. To make a fraction simpler, **divide** the top and bottom by the same number. The key idea: whatever you do to the top, you must do to the bottom. A fraction is in **simplest form** when the only number that divides both the top and bottom evenly is 1.

◇ **Example:** Fill in the missing number:  $\frac{3}{4} = \frac{?}{12}$ .

⇒ Look at the denominators. To get from 4 to 12, we multiply by 3, because  $4 \times 3 = 12$ . To keep the fraction equivalent, we must multiply the top by the same number:  $3 \times 3 = 9$ . So the missing numerator is 9, which means  $\frac{3}{4} = \frac{9}{12}$ .

**Answer:**  $\frac{9}{12}$

## PRACTICE

Find each equivalent fraction or write the fraction in simplest form.

- |                                   |       |   |       |
|-----------------------------------|-------|---|-------|
| 1. $\frac{1}{2} = \frac{?}{4}$    | _____ | 11. $\frac{3}{10} = \frac{?}{100}$          | _____ |
| 2. $\frac{1}{3} = \frac{?}{6}$    | _____ | 12. $\frac{1}{2} = \frac{?}{6}$             | _____ |
| 3. $\frac{2}{5} = \frac{?}{10}$   | _____ | 13. $\frac{2}{4} = \frac{?}{2}$             | _____ |
| 4. $\frac{3}{4} = \frac{?}{8}$    | _____ | 14. $\frac{4}{6} = \frac{?}{3}$             | _____ |
| 5. $\frac{1}{2} = \frac{?}{8}$    | _____ | 15. $\frac{6}{8} = \frac{?}{4}$             | _____ |
| 6. $\frac{2}{3} = \frac{?}{12}$   | _____ | 16. Write $\frac{2}{8}$ in simplest form    | _____ |
| 7. $\frac{1}{4} = \frac{?}{12}$   | _____ | 17. Write $\frac{5}{10}$ in simplest form   | _____ |
| 8. $\frac{3}{5} = \frac{?}{10}$   | _____ | 18. Write $\frac{6}{12}$ in simplest form   | _____ |
| 9. $\frac{5}{6} = \frac{?}{12}$   | _____ | 19. Write $\frac{8}{12}$ in simplest form   | _____ |
| 10. $\frac{1}{5} = \frac{?}{100}$ | _____ | 20. Write $\frac{50}{100}$ in simplest form | _____ |

### Word Problems

21. Mia ate  $\frac{1}{2}$  of her granola bar. Her brother says he ate  $\frac{4}{8}$  of an identical bar. Did they eat the same amount? \_\_\_\_\_
22. A recipe calls for  $\frac{2}{3}$  cup of flour. Jordan only has a measuring cup marked in twelfths. How many twelfths of a cup should Jordan use? \_\_\_\_\_
23. On a spelling test, Leo got  $\frac{15}{20}$  of the words correct. Write his score as a fraction in simplest form. \_\_\_\_\_
24. A pizza is cut into 6 equal slices and Ava takes 3 of them. Her friend says Ava took  $\frac{1}{2}$  of the pizza. Is the friend correct? \_\_\_\_\_



## Answer Keys

- |  |  |
|--|--|
| <p>1. <math>\frac{2}{4}</math></p> <p>2. <math>\frac{2}{6}</math></p> <p>3. <math>\frac{4}{10}</math></p> <p>4. <math>\frac{6}{8}</math></p> <p>5. <math>\frac{4}{8}</math></p> <p>6. <math>\frac{8}{12}</math></p> <p>7. <math>\frac{3}{12}</math></p> <p>8. <math>\frac{6}{10}</math></p> <p>9. <math>\frac{10}{12}</math></p> <p>10. <math>\frac{20}{100}</math></p> <p>11. <math>\frac{30}{100}</math></p> <p>12. <math>\frac{3}{6}</math></p> | <p>13. <math>\frac{1}{2}</math></p> <p>14. <math>\frac{2}{3}</math></p> <p>15. <math>\frac{3}{4}</math></p> <p>16. <math>\frac{1}{4}</math></p> <p>17. <math>\frac{1}{2}</math></p> <p>18. <math>\frac{1}{2}</math></p> <p>19. <math>\frac{2}{3}</math></p> <p>20. <math>\frac{1}{2}</math></p> <p>21. Yes, <math>\frac{1}{2} = \frac{4}{8}</math></p> <p>22. <math>\frac{8}{12}</math> cup</p> <p>23. <math>\frac{3}{4}</math></p> <p>24. Yes, <math>\frac{3}{6} = \frac{1}{2}</math></p> |
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### Step-by-Step Explanations

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|---|--|
| <p>1. Multiply top and bottom by 2: <math>1 \times 2 = 2</math> and <math>2 \times 2 = 4</math>.</p> <p>2. The bottom doubled, so double the top too: <math>1 \times 2 = 2</math>.</p> <p>3. To go from 5 to 10 you multiply by 2, so <math>2 \times 2 = 4</math> on top.</p> <p>4. The bottom doubled from 4 to 8, so double the top: <math>3 \times 2 = 6</math>.</p> <p>5. To get 8 you multiply 2 by 4, so the top is <math>1 \times 4 = 4</math>.</p> <p>6. 3 times 4 is 12, so multiply the top by 4: <math>2 \times 4 = 8</math>.</p> <p>7. 4 times 3 is 12, so the top becomes <math>1 \times 3 = 3</math>.</p> <p>8. The bottom doubled, so double the top too: <math>3 \times 2 = 6</math>.</p> <p>9. 6 times 2 is 12, so multiply the top by 2: <math>5 \times 2 = 10</math>.</p> <p>10. 5 times 20 is 100, so the top is <math>1 \times 20 = 20</math>.</p> <p>11. 10 times 10 is 100, so multiply the top by 10: <math>3 \times 10 = 30</math>.</p> <p>12. 2 times 3 is 6, so the top becomes <math>1 \times 3 = 3</math>.</p> <p>13. Divide top and bottom by 2: <math>2 \div 2 = 1</math> and <math>4 \div 2 = 2</math>.</p> | <p>14. Divide top and bottom by 2: <math>4 \div 2 = 2</math> and <math>6 \div 2 = 3</math>.</p> <p>15. Divide top and bottom by 2: <math>6 \div 2 = 3</math> and <math>8 \div 2 = 4</math>.</p> <p>16. Both 2 and 8 divide by 2: <math>2 \div 2 = 1</math> and <math>8 \div 2 = 4</math>.</p> <p>17. Both 5 and 10 divide by 5: <math>5 \div 5 = 1</math> and <math>10 \div 5 = 2</math>.</p> <p>18. Both 6 and 12 divide by 6: <math>6 \div 6 = 1</math> and <math>12 \div 6 = 2</math>.</p> <p>19. Both 8 and 12 divide by 4: <math>8 \div 4 = 2</math> and <math>12 \div 4 = 3</math>.</p> <p>20. Both 50 and 100 divide by 50: <math>50 \div 50 = 1</math> and <math>100 \div 50 = 2</math>.</p> <p>21. Multiply the top and bottom of <math>\frac{1}{2}</math> by 4: <math>\frac{1 \times 4}{2 \times 4} = \frac{4}{8}</math>. The fractions are equivalent, so they ate the same amount.</p> <p>22. Since <math>3 \times 4 = 12</math>, multiply the top by 4 as well: <math>2 \times 4 = 8</math>. So <math>\frac{2}{3} = \frac{8}{12}</math> cup.</p> <p>23. Both 15 and 20 divide by 5: <math>15 \div 5 = 3</math> and <math>20 \div 5 = 4</math>. So <math>\frac{15}{20} = \frac{3}{4}</math>.</p> <p>24. Ava took <math>\frac{3}{6}</math>. Divide the top and bottom by 3: <math>3 \div 3 = 1</math> and <math>6 \div 3 = 2</math>, giving <math>\frac{1}{2}</math>.</p> |
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