

63. Finding Equivalent Fractions by Multiplying



Look at the circles above. What part of circle A is shaded? You could answer by saying that $\frac{1}{2}$ or $\frac{2}{4}$ is shaded. Remember, $\frac{1}{2}$ and $\frac{2}{4}$ are equivalent fractions.

The rule below can be used to find other fractions equal to $\frac{1}{2}$.

To find an equivalent fraction, multiply the numerator and the denominator by the same number.

$$\frac{1}{2} \times \frac{2}{2} = \frac{2}{4} \quad \frac{1}{2} \times \frac{3}{3} = \frac{3}{6} \quad \frac{1}{2}, \frac{2}{4}, \text{ and } \frac{3}{6} \text{ are equivalent fractions.}$$

A. Do these exercises.

1. Write **yes** or **no** to tell whether each pair of fractions is equivalent. Use the circles in the lesson to help you.

a. $\frac{1}{2}$ $\frac{4}{8}$ **yes** b. $\frac{2}{4}$ $\frac{4}{8}$ **yes** c. $\frac{1}{3}$ $\frac{2}{6}$ **yes** d. $\frac{2}{3}$ $\frac{5}{6}$ **no**

2. Count by fourths. Copy, and fill in the missing numbers. Use mixed numbers after you reach 1.

$\frac{1}{4}$, $\frac{2}{4}$, $\frac{3}{4}$, 1, $1\frac{1}{4}$, $1\frac{2}{4}$, $1\frac{3}{4}$, 2, $2\frac{1}{4}$, $2\frac{2}{4}$, $2\frac{3}{4}$, 3

3. Count by eighths. Copy, and fill in the missing numbers as you did for number 2.

$\frac{1}{8}$, $\frac{2}{8}$, $\frac{3}{8}$, $\frac{4}{8}$, $\frac{5}{8}$, $\frac{6}{8}$, $\frac{7}{8}$, 1, $1\frac{1}{8}$, $1\frac{2}{8}$, $1\frac{3}{8}$, $1\frac{4}{8}$, $1\frac{5}{8}$, $1\frac{6}{8}$, $1\frac{7}{8}$, 2

4. Write five fractions that are equivalent to $\frac{1}{3}$. $\frac{2}{6}$ $\frac{3}{9}$ $\frac{4}{12}$ $\frac{5}{15}$ $\frac{6}{18}$

B. Copy these fractions, and fill in the missing parts to make equivalent fractions. For the first one, think: 1 times what number is 3? The answer is 3. So for the denominator, $2 \times 3 =$ _____.

5. a. $\frac{1}{2} = \frac{3}{6}$ b. $\frac{1}{2} = \frac{4}{8}$ c. $\frac{1}{4} = \frac{2}{8}$ d. $\frac{2}{3} = \frac{4}{6}$

6. a. $\frac{1}{4} = \frac{2}{8}$ b. $\frac{3}{4} = \frac{6}{8}$ c. $\frac{1}{3} = \frac{2}{6}$ d. $\frac{2}{3} = \frac{4}{6}$

Lesson 62 states: To find how many halves are in a number, multiply by 2. A similar rule can be made about any part.

To find how many of any part are in a whole number, multiply by the number of parts in one whole thing. For thirds, multiply by 3. For fourths, multiply by 4, and so on.