Rename To Higher Terms

Introducing:
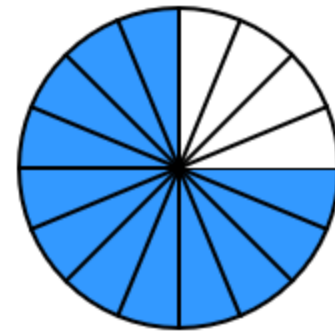
- higher terms
- identity

LOWER TERMS   TO   HIGHER TERMS
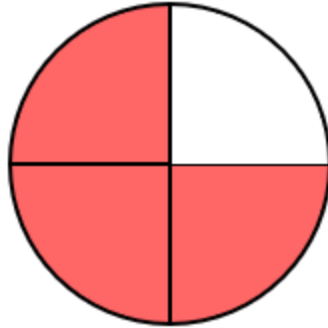
$$\frac{3}{4} \qquad = \qquad \frac{12}{16}$$
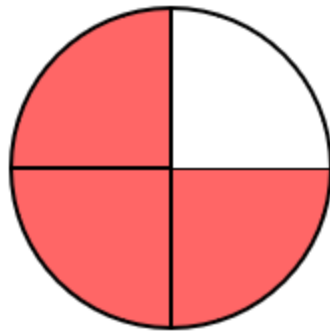
Rename to Higher Terms 1

LOWER TERMS   TO   HIGHER TERMS
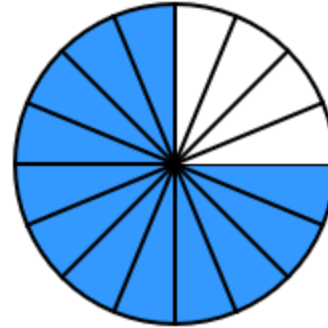
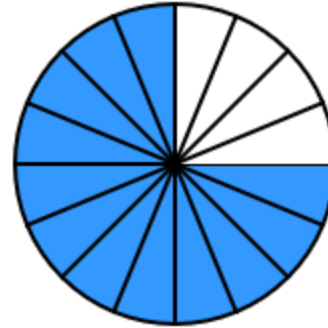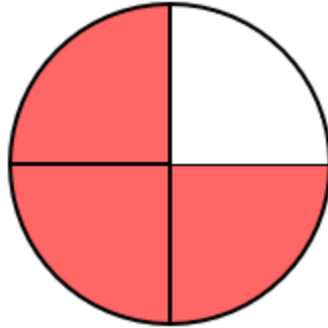$$\frac{3}{4} = \frac{12}{16}$$

The picture shows two fractions that are the same size. The fraction on the right is in *higher terms* because the numerator and denominator are larger. The parts are smaller in the fraction on the right but there are more parts, making the two fractions equal.

Rename to Higher Terms 2

LOWER TERMS   **TO**   **HIGHER TERMS**

$$\frac{3}{4} \quad X \quad \frac{4}{4} \quad = \quad \frac{12}{16}$$
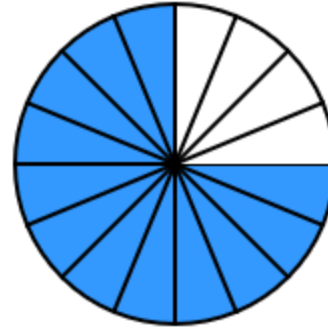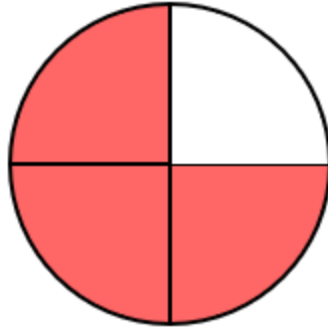
To rename a fraction in *higher terms*, multiply both the numerator and denominator by the same number. The picture shows that the numerator 3 and the denominator 4 are each multiplied by 4, giving the fraction $^{12}/_{16}$.

Rename to Higher Terms 3

LOWER TERMS   **TO**   **HIGHER TERMS**
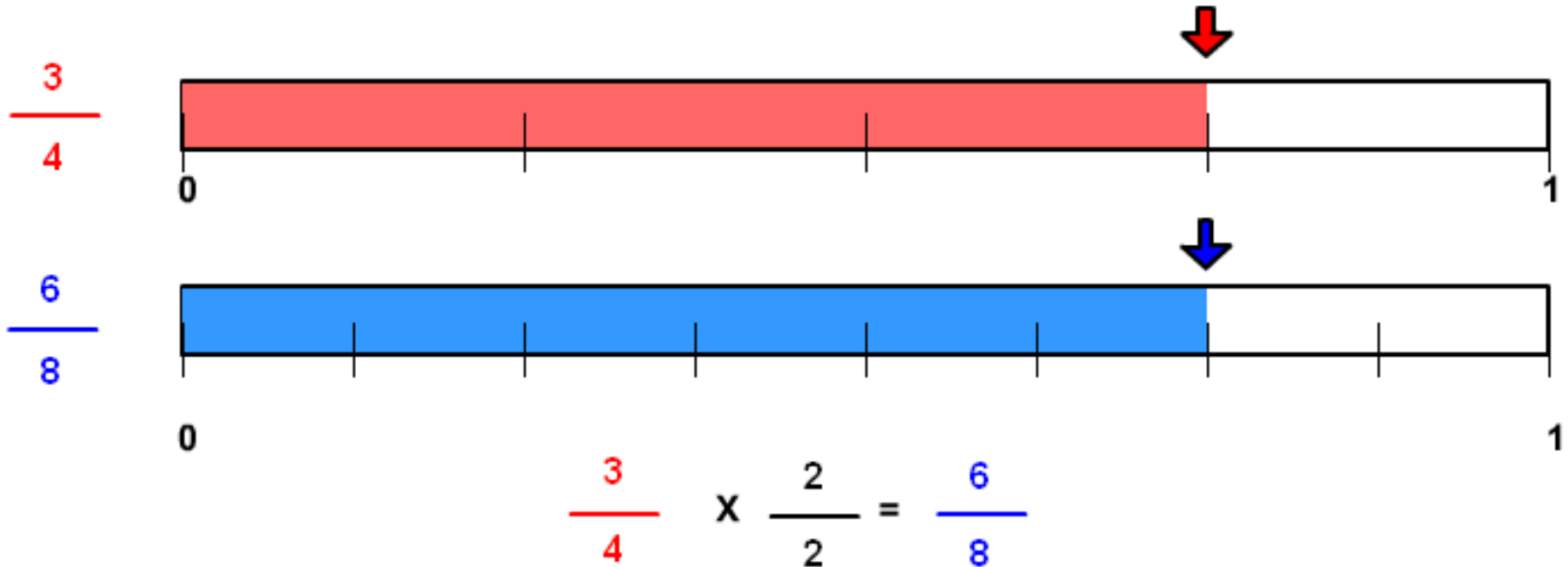
$$\frac{3}{4} \quad \times \quad \frac{4}{4} \quad = \quad \frac{12}{16}$$

The number ⁴/₄ is equal to 1. Multiplying by 1 or any form of 1 will not change the size of the number. One (1) is the *identity* for multiplication.

Rename to Higher Terms 4

$$\frac{3}{4}$$

$$\frac{6}{8}$$

$$\frac{3}{4} \quad \times \quad \frac{2}{2} \quad = \quad \frac{6}{8}$$

The top fraction shows $^3/_4$ and the lower fraction shows $^6/_8$. Notice how $^3/_4$ and $^6/_8$ are the same distance on the number lines. Multiplying both the numerator and the denominator by 2 will give a numerator of 6 and a denominator of 8.
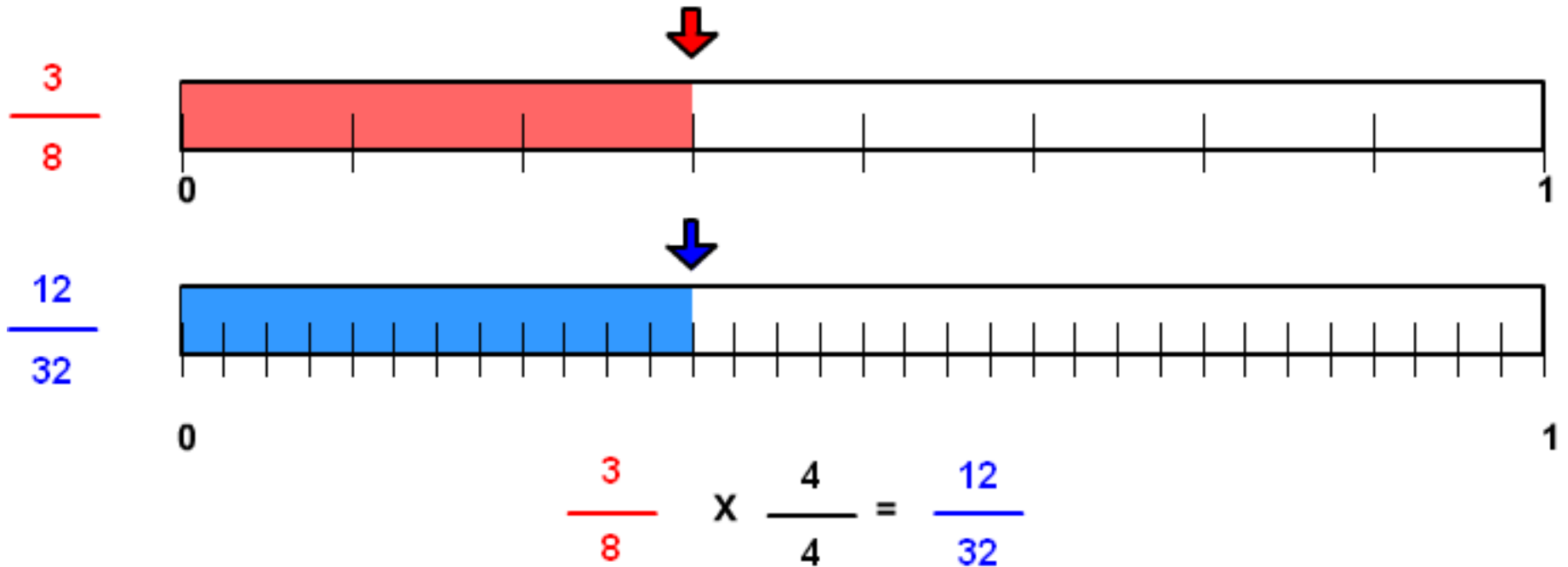
Rename to Higher Terms 5

$$\frac{3}{8} \quad = \quad \frac{?}{32}$$

Often you are asked to write a fraction in higher terms without a picture of the fraction. Here, you are asked to write $\frac{3}{8}$ as 32's.

To do this, determine what the denominator 8 is multiplied by to get a denominator 32. In this case 8 is multiplied by 4 to get 32. Then multiply the numerator by 4 to get a numerator of 12.
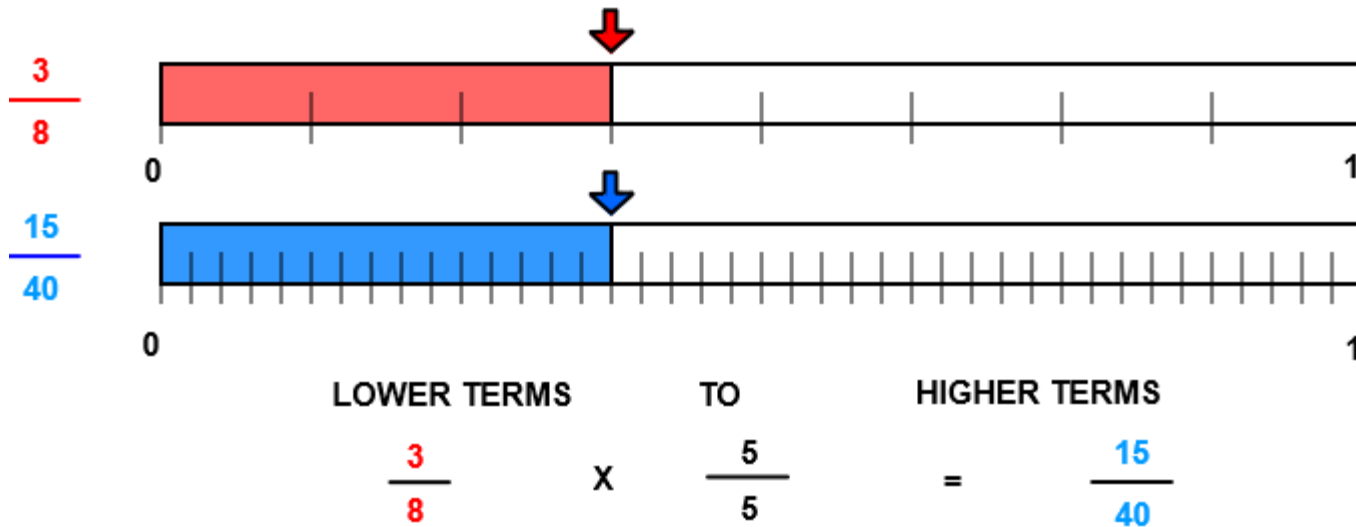
Rename to Higher Terms 6

This is a picture of the previous example. Notice that $\frac{3}{8}$ and $\frac{12}{32}$ are at the same position on the number line. The fraction $\frac{3}{8}$ is renamed as $\frac{12}{32}$ by multiplying by $\frac{4}{4}$, which is a form of one.

Rename to Higher Terms 7

$$\frac{3}{8} = \frac{?}{40}$$

Write $^3/_8$ with a denominator of 40.

Rename to Higher Terms 8

$$\frac{3}{8}$$

$$\frac{15}{40}$$

LOWER TERMS	TO	HIGHER TERMS
$\dfrac{3}{8}$ X	$\dfrac{5}{5}$ =	$\dfrac{15}{40}$

Multiplying both numerator and denominator by 5 is the same as multiplying by 1.
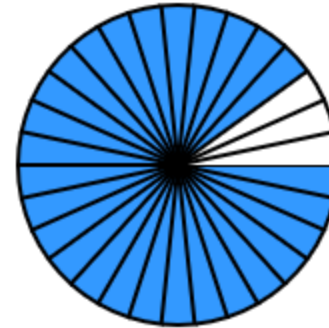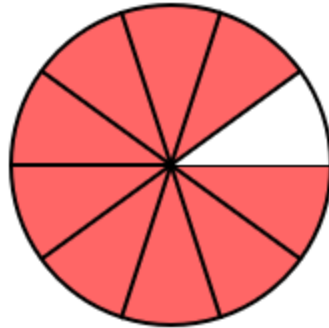
$$^3/_8 = {}^{15}/_{40}$$

Rename to Higher Terms 9

$$\frac{9}{10} \quad = \quad \frac{?}{30}$$

Write $\frac{9}{10}$ with a denominator of 30.

Rename to Higher Terms 10

$$\frac{9}{10}$$

$$\frac{27}{30}$$

LOWER TERMS	TO	HIGHER TERMS
$\frac{9}{10}$ X $\frac{3}{3}$	=	$\frac{27}{30}$

Multiplying both numerator and denominator by 3 is the same as multiplying by 1.

$$^9/_{10} = \; ^{27}/_{30}$$