RENAME TO HIGHER TERMS
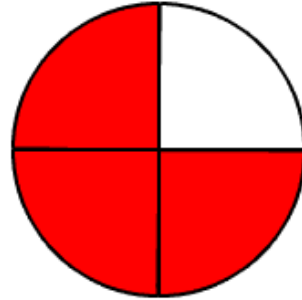
Introducing:
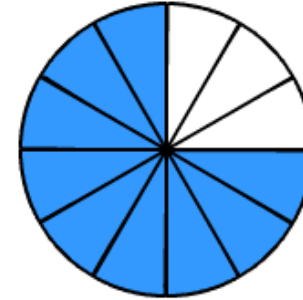
- higher terms
- identity

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

$$\frac{9}{12}$$
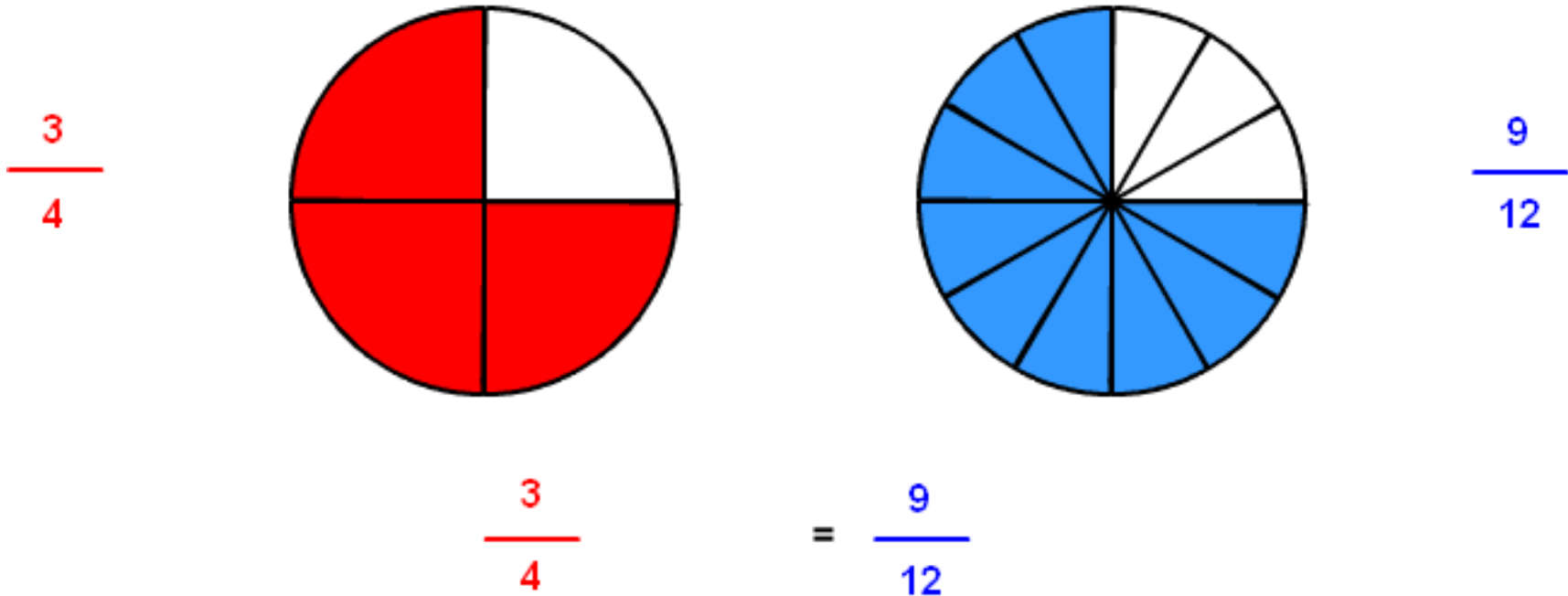
$$\frac{3}{4} = \frac{9}{12}$$

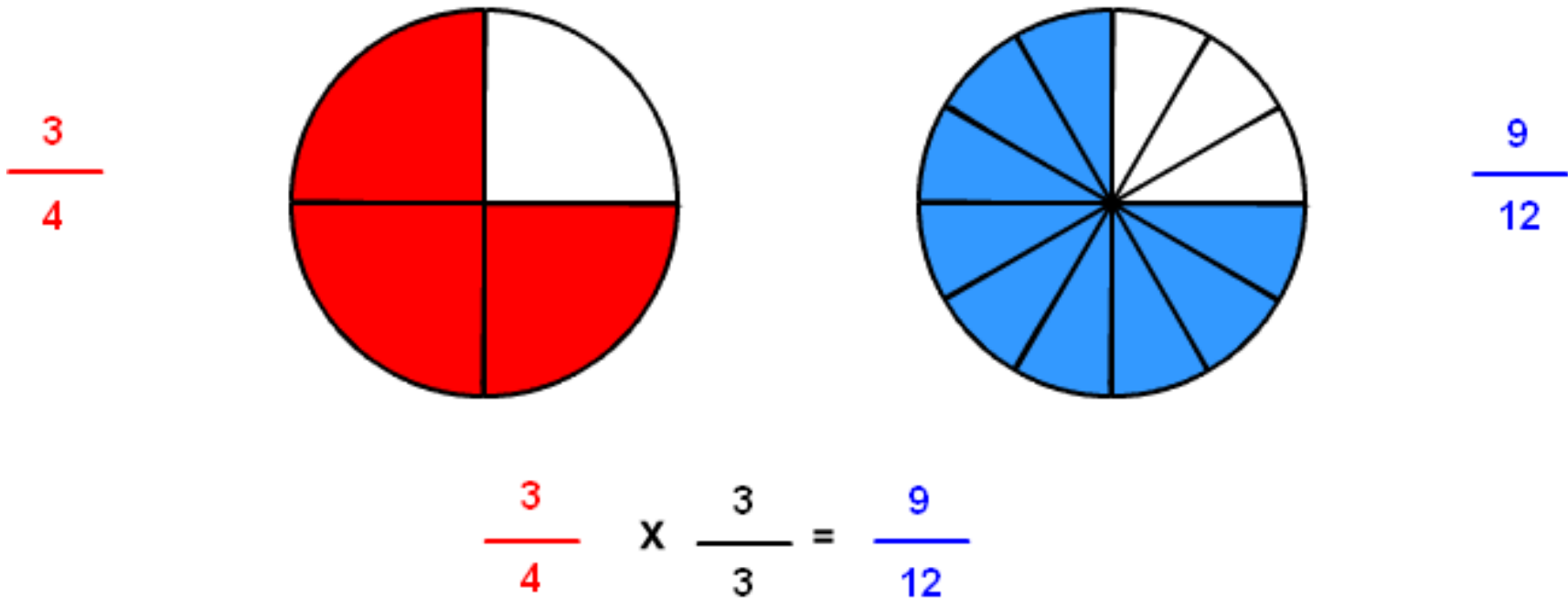Created by Richard Rand http://www.visualfractions.com/

Rename To Higher Terms 1

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

$$\frac{9}{12}$$

$$\frac{3}{4} = \frac{9}{12}$$

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.

Rename To Higher Terms 2

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

$$\frac{9}{12}$$

$$\frac{3}{4} \;\; X \;\; \frac{3}{3} \;\; = \;\; \frac{9}{12}$$

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 both multiplied by 3, giving the fraction $^{9}/_{12}$.

Rename To Higher Terms 3

$$\frac{3}{4} \qquad \qquad \frac{9}{12}$$

$$\frac{3}{4} \quad \times \quad \frac{3}{3} \quad = \quad \frac{9}{12}$$
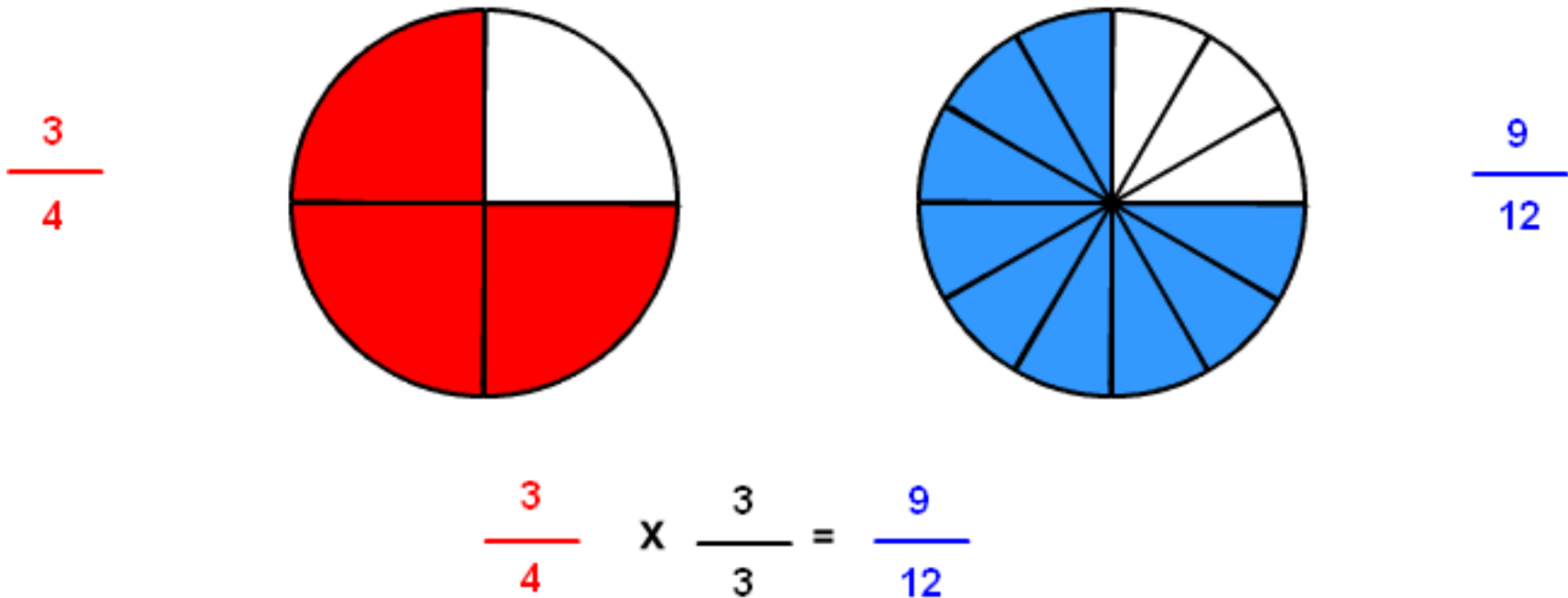
The number ³/₃ is equal to 1. Multiplying by 1 or any form of 1 will not change the size of the number. One (1) is the *identity* for multiplication.

Rename To Higher Terms 4

$$\frac{3}{4} \quad\quad\quad \frac{6}{8}$$

$$\frac{3}{4} \times \frac{2}{2} = \frac{6}{8}$$
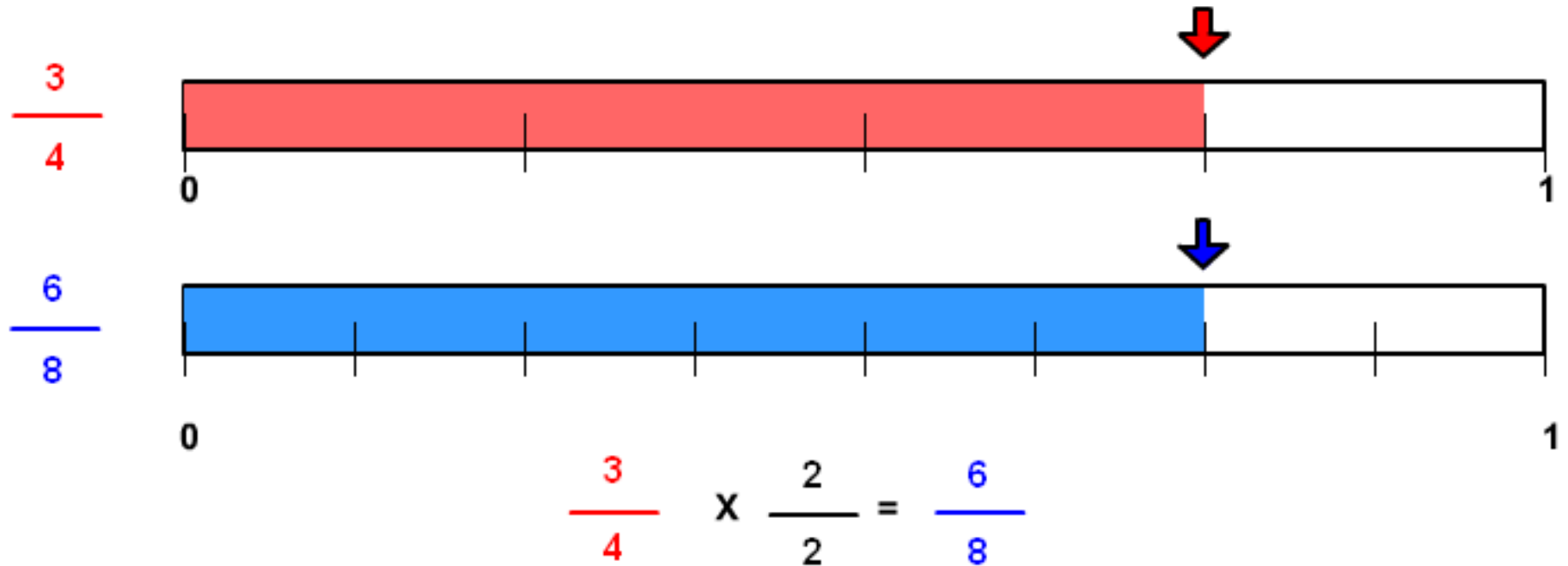
The top fraction shows $^3/_4$ and the lower fraction shows $^6/_8$. Notice how $^3/_4$ and $^6/_8$ are the same distance on the number lines. Multiplying both the numerator and the denominator by 2 will give a numerator of 6 and a denominator of 8.
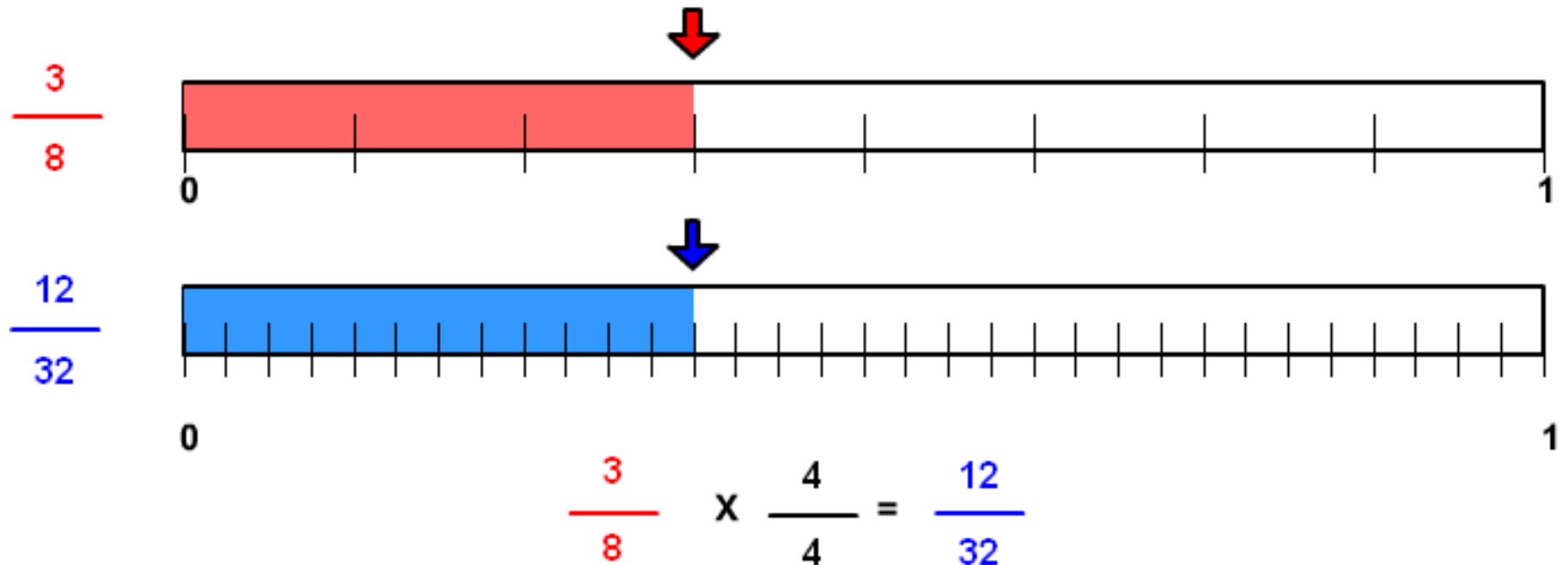
Rename To Higher Terms 5

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

Often you are asked to write a fraction in higher terms without a picture of the fraction. Here, you are asked to write $^3/_8$ as 32's.

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

Rename To Higher Terms 6

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

$$\frac{12}{32}$$

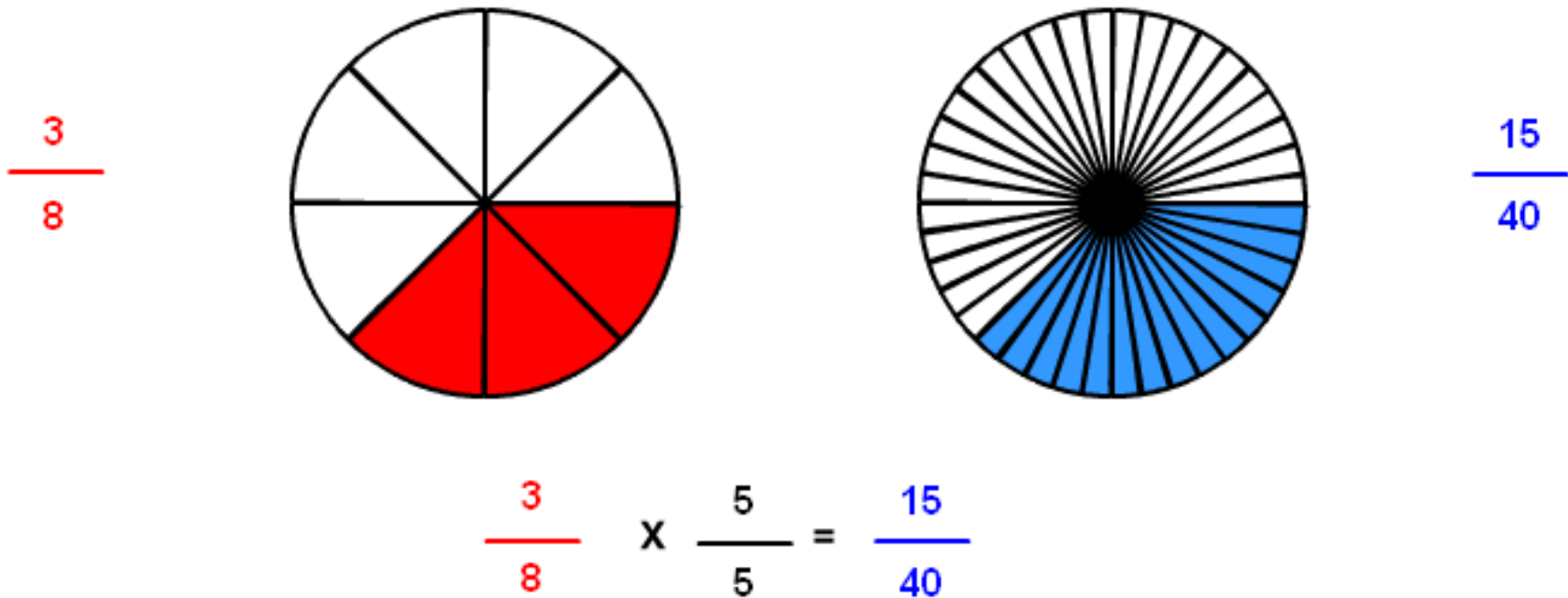$$\frac{3}{8} \times \frac{4}{4} = \frac{12}{32}$$

This is a picture of the previous example. Notice that $\frac{3}{8}$ and $\frac{12}{32}$ have the same position on the number line. The fraction $\frac{3}{8}$ is renamed as $\frac{12}{32}$ by multiplying both terms by $\frac{4}{4}$.

Rename To Higher Terms 7

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

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

Rename To Higher Terms 8

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

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

$$\frac{3}{8} \times \frac{5}{5} = \frac{15}{40}$$

This is a picture of the previous example. Both numerator and denominator were multiplied by 5. You can arrive at 5 by asking: "What number times the denominator 8 is equal to the denominator 40?"

Notice that $^3/_8$ and $^{15}/_{40}$ are the same size.