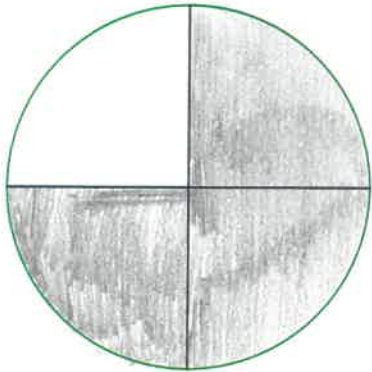
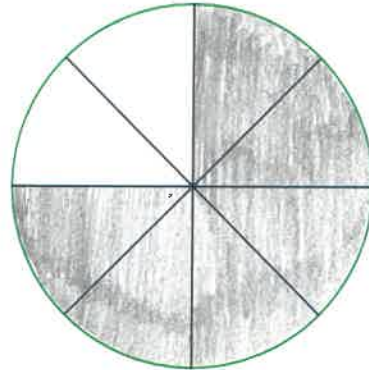


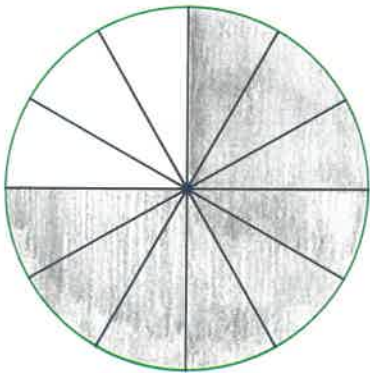
Shade in $\frac{3}{4}$ of this circle.



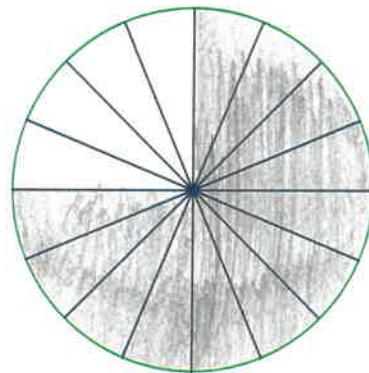
Shade in $\frac{6}{8}$ of this circle.



Shade in $\frac{9}{12}$ of this circle.



Shade in $\frac{12}{16}$ of this circle.



Multiply the numerator and denominator of $\frac{3}{4}$ by 2, 3, and 4 in the problems below.

$$\frac{3 \cdot 2}{4 \cdot 2} = \frac{6}{8}$$

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

$$\frac{3 \cdot 4}{4 \cdot 4} = \frac{12}{16}$$

The fractions you have created in the pictures and using fraction notation are called equivalent fractions. Define equivalent fractions.

Equivalent fractions have the same value, even though they may look different.

In the example above, you multiplied both the numerator and denominator of $\frac{3}{4}$ by 2, 3, and 4 to create equivalent fractions. These are just a few examples of the infinite number of fractions that can be created by multiplying (or dividing) both the numerator and denominator of any fraction by the same number. If you multiply the numerator and denominator by 7, 74, 832, or even 1 million, you will always get an equivalent fraction.

You can also get equivalent fractions by dividing the numerator and denominator of a fraction by the same number.

The fraction $\frac{24}{32}$ can be simplified by dividing the numerator and denominator by the same number.

If we divide both the numerator and denominator by 2, we get $\frac{24 \div 2}{32 \div 2} = \frac{12}{16}$.

$\frac{12}{16}$ is equivalent and a simplified form of $\frac{24}{32}$.

If instead, we divide both the numerator and denominator by 8, we get $\frac{24 \div 8}{32 \div 8} = \frac{3}{4}$, also an equivalent fraction.

$\frac{3}{4}$ is considered the simplest form of the fraction, since 3 and 4 have no other common factors except 1.

We often need to build an equivalent fraction with an indicated numerator or denominator.

For example, what is the missing number that will make these two fractions equivalent? $\frac{3}{7} = \frac{\quad}{35}$

Multiplying the numerator and denominator of $\frac{3}{7}$ by 5 will generate an equivalent fraction with a denominator of 35.

$$\frac{3}{7} = \frac{3 \cdot 5}{7 \cdot 5} = \frac{15}{35}$$

If the numerator or denominator gets smaller, you may need to divide both the numerator and denominator by the same amount.

$\frac{24}{36} = \frac{\quad}{3}$ For 36 to become 3, both the numerator and denominator need to be divided by 12.

$$\frac{24}{36} = \frac{24 \div 12}{36 \div 12} = \frac{2}{3}$$

Make these fractions equivalent:

$$\frac{3 \cdot 9}{4 \cdot 4} = \frac{27}{36}$$

$$\frac{4 \cdot 5}{7 \cdot 5} = \frac{20}{35}$$

$$\frac{25 \div 5}{30 \div 5} = \frac{5}{6}$$

$$\frac{12 \div 4}{18 \div 4} = \frac{2}{3}$$

$$\frac{2 \cdot 4}{5 \cdot 4} = \frac{8}{20}$$

$$\frac{2}{6} = \frac{14 \div 7}{42 \div 7}$$