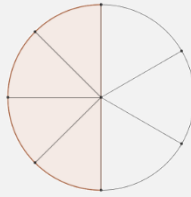


Lesson 9 – Equivalent Fractions and Simplifying

Starter

1) True or false? Give a reason



The shaded area = $\frac{4}{7}$

2) Write these numbers from smallest to biggest:

0.13, 0.1, 0.103, 0.133

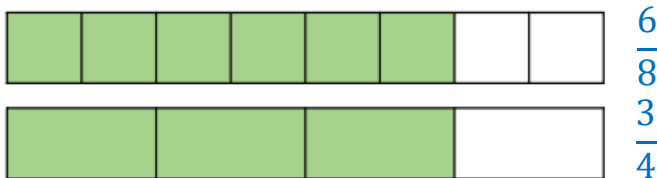
Starter Answers

1) False, the circle is not split into equal sized sections

2) 0.1, 0.103, 0.13, 0.133

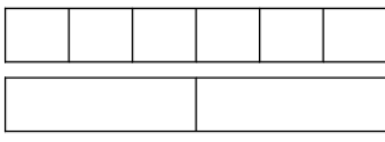
If two fractions are **equivalent**, they have the **same value**.

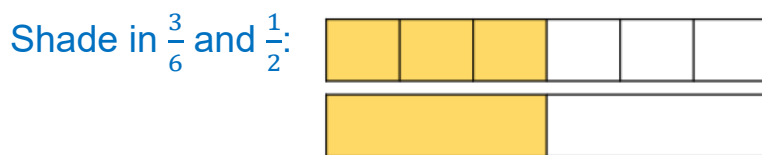
We can use a **bar model** to show that $\frac{6}{8}$ is equivalent to $\frac{3}{4}$



Example 1

Fill in the gap to make the two fractions equivalent.

$$\frac{3}{6} = \frac{1}{\quad}$$




We can see that $\frac{3}{6}$ is equivalent to $\frac{1}{2}$

NOTE: notice how we have divided both the numerator and the denominator by 3. As long as we multiply or divide the numerator and the denominator by the same numbers, the fractions will be equivalent.

Your go

Fill in the gaps to make the fractions equivalent.

a) $\frac{4}{5} = \frac{12}{?}$ b) $\frac{6}{21} = \frac{?}{7}$ c) $\frac{?}{56} = \frac{6}{8} = \frac{3}{?}$

Answers

a) $\frac{4}{5} = \frac{12}{15}$ b) $\frac{6}{21} = \frac{2}{7}$ c) $\frac{42}{56} = \frac{6}{8} = \frac{3}{4}$

Example 2

Jenny writes the following:

$$\frac{1}{3} = \frac{7}{9}$$

What mistake has Jenny made?

$\frac{7}{9}$ is not equivalent to $\frac{1}{3}$ as she has added instead of multiplied/divided

Simplifying

When we **simplify** a fraction, we are trying to find an equivalent fraction where the numerator and denominator are as small as possible.

Example 3

Simplify:

a) $\frac{10}{12}$

$$\frac{10}{12} = \frac{5}{6}$$

There isn't a number we could divide both 5 and 6 by except 1, so $\frac{5}{6}$ is in its simplest form

b) $\frac{15}{25}$

$$\frac{15}{25} = \frac{3}{5}$$

c) $\frac{54}{90}$

$$\frac{54}{90} = \frac{27}{45} = \frac{3}{5}$$