

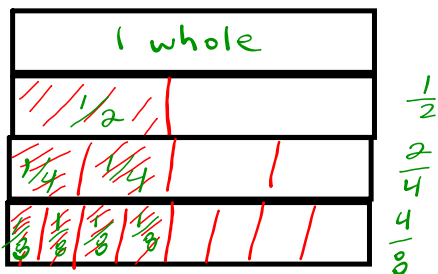
Lesson 2: Equivalent Fractions Two or more fractions are equivalent Sept 29, 2022

Recall: Improper Fraction

Definition: Equivalent (adjective)  
 ↳ equal/same but different form. ex. cat = chat

Pg 2.2  
Equivalent Fractions: have the same value but different forms.

Pg 2.2



ex.  $\frac{1}{2} = \frac{50}{100} = 0.5 = \frac{2}{4}$

$\frac{1}{2} \neq \frac{2}{8} = \frac{1}{4}$

# Simplifying Fractions to Find Equivalent Fractions

similar to pg 2.11

example:

What is equivalent

to

$$\frac{4}{8}$$

a)  $\frac{1}{4}$

b)  $\frac{1}{2}$

c)  $\frac{1}{8}$

$$\frac{4 \overset{\circ}{\div} 4}{8 \overset{\circ}{\div} 4} = \frac{1}{2}$$

$$\frac{1}{2}$$

b) is equivalent to  $\frac{4}{8}$

step iii:

Divide both top and bottom by GCD to simplify

You do: p 2.11 / 2.12  
 Bonus: try 2.10 expression

$$\frac{4}{8} \times \frac{2}{2} = \frac{8}{16}$$

simplify fraction(s)

step i: Find all factors of top / bottom

↳ definition: a # that gives a whole answer when dividing the given

↓ #. factor  
 4 : 1, 2, 4

8 : 1, 2, 4, 8

step ii: Find the Greatest Common Divisor out of the factors.

equation

$$2 \times 2 = 1 + 1 \times 2$$

<sup>x</sup>  
Rewriting Fractions to Find Equivalent  
 (doesn't change value of) Fractions

P 2.10

a)  $\frac{3}{4} \times \frac{7}{7} = \frac{21}{28}$

step i: Do trial and error

step ii: x the top by  
a #

x the bottom by the  
exact same #.

b)  $\frac{4}{5} \times \frac{6}{6} = \frac{24}{30}$

P. 2.14

$\frac{1}{2} \times \frac{25}{25} = \frac{25}{50}$

$\frac{1}{2} \times \frac{50}{50} = \frac{50}{100}$

Definition:  
 you have proportions  
 when 2 fractions  
 are equal (equivalent)

# Verifying Two Fractions are Equivalent Proportional

P 2.16 - chart

Fractions	Products	Proportions (yes) <span style="color: green;">(yes)</span>
a) $\frac{1}{5} \stackrel{?}{=} \frac{8}{40}$	$40 \times 1 = 5 \times 8$ $40 = 40$	✓
b) $\frac{2}{3} = \frac{18}{27}$		✓
c) $\frac{2}{4} \stackrel{?}{=} \frac{1}{4}$		✗

step 1. verify by cross multiplying  
(NOT the same as multiplying)  
and you should have same # on each side

b)  ~~$\frac{2}{3} = \frac{18}{27}$~~   
 $27 \times 2 = 3 \times 18$   
 $54 = 54$  ✓  
 c)  ~~$\frac{2}{4} = \frac{1}{4}$~~   
 $4 \times 2 = 4 \times 1$   
 $8 = 4$  ✗

a)  ~~$\frac{1}{5} = \frac{8}{40}$~~   
 $40 \times 1 = 5 \times 8$   
 $40 = 40$  ✓  
 ~~$27 \times 2 = 3 \times 18$~~

You do for homework  
and tomorrow pg 2.17 - 2.26  
Bonus: math whiz 2.27.