

Warm Up
 Find the Greatest Common Factor (GCF) using a factor column
 24, 36 $GCF = 12$ 84, 63

Find the Greatest Common Factor (GCF) using prime factorization
 96, 54 $GCF = 3^2 = 9$

Aug 26-7:39 AM

Handwritten prime factorization trees for 96 and 54. For 96, factors are 2, 2, 2, 2, 3. For 54, factors are 2, 3, 3, 3. The GCF is identified as $2 \cdot 3 = 6$.

Aug 26-1:17 PM

2.1 Simplifying Fractions

What is a fraction?
 A part of a number expressed $\frac{a}{b}$ where a is an integer called the **numerator** and b is a non-zero integer called the **denominator**.

What is simplest form of a fraction?
 Simplest form is when the numerator and denominator have a GCF of 1 (aka, relatively prime).

What are equivalent fractions?
 Fractions that represent the same number

Aug 26-7:43 AM

Writing fractions in simplest form

A jar contains 5 quarters, 6 dimes, and 7 pennies. What fraction of the jar's coins are dimes?
 First write the fraction

$\frac{\text{number of desired items}}{\text{total number of items}} = \frac{\text{number of dimes}}{\text{total number of coins}} = \frac{6}{18}$

$\frac{6}{18} \div \frac{6}{6} = \frac{1}{3}$ **Identity property of multiplication!**

What property allows us to multiply any number by one and get the same number?

Using Prime factorization

$\frac{6}{18} = \frac{2 \cdot 3}{2 \cdot 3 \cdot 3} = \frac{\cancel{2} \cdot \cancel{3}}{\cancel{2} \cdot \cancel{3} \cdot 3} = \frac{1}{3}$

Aug 26-8:02 AM

Write the following fractions in lowest terms using prime factorization

$\frac{24}{36} = \frac{2 \cdot 2 \cdot 2 \cdot 3}{2 \cdot 2 \cdot 3 \cdot 3} = \frac{2}{3}$

$\frac{12}{28} = \frac{2 \cdot 2 \cdot 3}{2 \cdot 2 \cdot 7} = \frac{3}{7}$

Determining if fractions are equivalent

Are $\frac{3}{4}$ and $\frac{18}{24}$ equivalent?
 $\frac{3}{4}$ is in lowest terms
 $\frac{18}{24}$ is not in lowest terms
 $\frac{3}{4} \cdot \frac{6}{6} = \frac{18}{24}$ **yes!**

Aug 26-8:32 AM

Tell whether the following fractions are equivalent

$\frac{14}{24} = \frac{7}{12}$ **yes!** $\frac{3 \cdot 10}{7 \cdot 21} = \frac{30}{147}$ **No!**

Simplifying and Evaluating Algebraic Expressions

Simplify and evaluate the following expression for $x = 4$ and $y = -2$

$\frac{4x^2y}{2xy^2} = \frac{-1 \cdot \cancel{2} \cdot \cancel{2} \cdot x \cdot x \cdot y}{2 \cdot \cancel{x} \cdot y \cdot y} = \frac{-2x}{y}$

Simplify and evaluate the following expressions for $x = -2$ and $y = 3$:

$\frac{2x^3y}{6x} = \frac{\cancel{2} \cdot x \cdot x \cdot x \cdot y}{\cancel{2} \cdot 3 \cdot x} = \frac{x^2y}{3}$ $\frac{5x^2y}{10xy} = \frac{\cancel{5} \cdot x \cdot x \cdot y}{\cancel{5} \cdot 2 \cdot x \cdot y} = \frac{x}{2}$

Aug 26-10:19 AM

Homework:
Lesson 2.1 1-35 odd, 41-43 all

Aug 26-11:35 AM