Do Now:

Find two fractions equivalent to $\frac{6}{8}$

$\frac{3}{4}$ $\frac{12}{16}$ $\frac{24}{32}$ $\frac{48}{64}$

$\frac{60}{80}$ $\frac{36}{48}$ $\frac{66}{88}$

4.3 Simplifying Fractions

7.NS
7.EE

- SWBAT simplify fractions.
- SWBAT understand relationships among numbers.
- SWBAT grasp connections among math ideas. Understand how math ideas build on one another.

- Calculators: No

Equivalent fractions are equal fractions that have the same simplest form.

Simplest form is when the numerator and denominator have a GCF of 1. (reduced)

Twelve students in a group of thirty are boys. Write the fraction of boys in the group in simplest form.

$\frac{\text{Boys}}{\text{Total}} = \frac{12}{30} \overset{\div 2}{=} \frac{6}{15} \overset{\div 3}{=} \frac{2}{5}$

$\frac{\text{Part}}{\text{Total}}$

Tell whether the fractions $\frac{3}{8}$ and $\frac{18}{48}$ are equivalent. (same)

$\frac{3}{8}$ ✓ Yes $\frac{3}{8} \cdot \frac{6}{6} = \frac{18}{48}$ ✓

$\frac{18}{48}$ ✓

$\frac{18 \div 6}{48 \div 6} = \frac{3}{8}$ ✓

Tell whether the fractions $\frac{10}{14}$ and $\frac{40}{56}$ are equivalent.

Yes

$\frac{10 \div 2}{14 \div 2} = \frac{5}{7}$

$\frac{40 \div 2}{56 \div 2} = \frac{20 \div 2}{28 \div 2} = \frac{10 \div 2}{14 \div 2} = \frac{5}{7}$

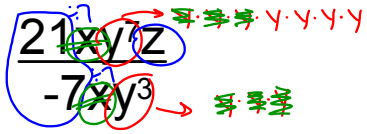
Write two fractions that are equivalent to $\frac{4}{10}$

Write two fractions that are equivalent to $\frac{-5}{8}$

$\frac{-10}{16}$ $\frac{-15}{24}$ $\frac{-50}{80}$

$\frac{-20}{32}$

Simplify: $\frac{21xy^7z}{-7xy^3}$



$\frac{3y^4z}{-1} = -3y^4z$

Simplify: $\frac{18c^4d^8}{27d^5}$

$\frac{2c^4d^3}{3}$

Simplify:

1. $\frac{4xy}{6x} = \frac{2y}{3}$
2. $\frac{-32a^5}{8ab} = \frac{-4a^4}{1b} = \frac{-4a^4}{b}$
3. $\frac{5r^2s}{10rs} = \frac{1r}{2} = \frac{r}{2}$

Evaluate the expression $\frac{-4x^3}{2x}$ when x = 5.

$\frac{-4x^3}{2x} = \frac{-2 \cdot x^2}{1} = \frac{-2x^2}{1} = -2x^2$

$-2x^2$ when $x=5 \rightarrow -2(5)^2$

$= -2(25) = -50$

Evaluate the expression $\frac{3b^3}{9b^2}$ when b = -4.

Solve

$$\frac{3b^3}{9b^2} = \frac{1 \cdot b}{3} = \frac{b}{3} \quad \frac{-4}{3}$$

$$\frac{3(-4)^3}{9(-4)^2} = \frac{3(-64)}{9(16)} = \frac{-192}{144} = \frac{-16}{12} = \frac{-4}{3}$$

$-4 \cdot (-4)(-4)$, $16(-4)$, -64; $16 \times 9 = 144$; $64 \times 3 = 192$

How do you know that $\frac{24}{40}$ and $\frac{30}{50}$ are equivalent fractions?

A crown is decorated with 44 diamonds, 30 emeralds, 22 pearls, 19 sapphires and 1 ruby. Write in simplest form the fraction of jewels in the crown that are emeralds.

$\frac{\text{Part}}{\text{Total}}$ $\frac{\text{Emeralds}}{\text{Total Jewels}}$

$\frac{30}{116} = \frac{15}{58}$

Total Jewels = 116

44+30+22+19+1

74+22

96+19

115+1

116

Exit Pass 4.3

A crown is decorated with 44 diamonds, 30 emeralds, 22 pearls, 19 sapphires and 1 ruby. Write in *simplest form* the fraction of jewels in the crown that are...

a. pearls

b. sapphires

c. diamonds

"Don't blame the sea if you cannot catch a fish."

Working individually or with a partner, complete the workbook.

Workbook pg.

Reflection of Today's Lesson

4.3 Simplifying Fractions

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- Calculators: No

Homework

pg. 182-183 #14-32 evens, 33-36, 48-51