

February 2, 2016  
 \* Quiz #3 - Tomorrow  
 \* 1.2 Order of Operations  
 \* Prior

Feb 2-9:04 AM

1.3 Rational Numbers  
 ↓  
 Fractions  
 Fundamental Principle of Fractions

$$\frac{a}{b} \cdot \frac{c}{c} = \frac{ac}{bc} = \frac{a}{b} \cdot 1 = \frac{a}{b}$$

Equivalent Fractions

$$\frac{1}{2} \cdot \frac{3}{3} = \frac{3}{6} = \frac{5}{5} = \frac{1}{2}$$

Equivalent

$$\frac{1}{2} = \frac{1/2}{2/2} = \frac{1/2}{1} = \frac{1}{2}$$

$$\frac{3}{6} = \frac{3/6}{6/6} = \frac{1/2}{1} = \frac{1}{2}$$

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$$\frac{26}{56} = \frac{2 \cdot 13}{2 \cdot 2 \cdot 2 \cdot 7} = \frac{13}{28}$$

Factor trees for 26 and 56:

- 26: 2 · 13
- 56: 2 · 28, 28: 2 · 14, 14: 2 · 7

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$$\frac{414}{784} = \frac{2 \cdot 3 \cdot 3 \cdot 23}{2 \cdot 2 \cdot 2 \cdot 2 \cdot 7 \cdot 7}$$

$$= \frac{207}{392} \leftarrow R.P.$$

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$$\frac{16x^6y^4z^8}{40x^4y^6z^2}$$

Prime factorization of numerator and denominator:

Numerator:  $2 \cdot 2 \cdot 2 \cdot 2 \cdot x \cdot x \cdot x \cdot x \cdot y \cdot y \cdot y \cdot y \cdot z \cdot z \cdot z \cdot z \cdot z \cdot z \cdot z \cdot z$

Denominator:  $2 \cdot 2 \cdot 2 \cdot 5 \cdot x \cdot x \cdot x \cdot x \cdot y \cdot y \cdot y \cdot y \cdot y \cdot y \cdot z \cdot z$

$$\frac{2 \cdot x \cdot x \cdot z \cdot z \cdot z \cdot z \cdot z \cdot z \cdot z \cdot z}{5 \cdot y \cdot y}$$

$$\frac{2x^2z^6}{5y^2} \leftarrow R.P.$$

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Greatest Common Divisor  
 or  
 Denominator

GCD

6 = 2 · 3, 14 = 2 · 7

$$\frac{6}{14} = \frac{2 \cdot 3}{2 \cdot 7} = \frac{3}{7}$$

GCD = 2

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

GCD = 1 ← Relatively Prime

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