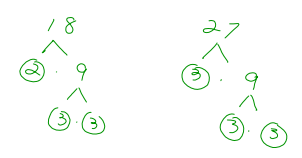


January 31, 2017
 * Quiz #3 - Tomorrow
 • Order of Operations
 * No Class on Tuesday
 February 10th.

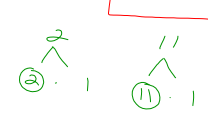
Jan 31-9:03 AM

GCD (a, b)
 • the GCD of two integers a & b is an integer that divides evenly into a & b.

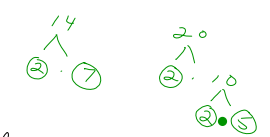
Jan 31-9:06 AM

GCD(18, 27) = 9

 18 = 2 · 3 · 3
 27 = 3 · 3 · 3
 = 9

Jan 31-9:08 AM

Lowest Terms
 GCD(a, b) = 1
 • GCD(2, 11) = 1

 Relatively Prime

Jan 31-9:10 AM

FPI: $\frac{a}{b} \cdot \frac{c}{c} = \frac{ac}{bc} = \frac{a}{b}$
 "one"
 write in lowest terms or "Reducing"
 $\frac{14}{20} = \frac{2 \cdot 7}{2 \cdot 2 \cdot 5} = 1 \cdot \frac{7 \cdot 1}{2 \cdot 5} = \frac{7}{10}$ Reduced

 GCD(7, 10) = 1

Jan 31-9:13 AM

Operations on Fractions
 ① multiplication
 $\frac{a}{b} \cdot \frac{c}{d} = \frac{ac}{bd}$ R.P.
 $-\frac{14}{20} \cdot \frac{10}{21} = -\frac{140}{420} = -\frac{1}{3}$

 $-\frac{14}{20} \cdot \frac{10}{21} = -\frac{\cancel{14}^7}{\cancel{20}_4} \cdot \frac{\cancel{10}_2}{\cancel{21}_3} = -\frac{1}{1} \cdot \frac{1}{3} = -\frac{1}{3}$

Jan 31-9:19 AM

$$-\frac{140}{420} = -\frac{\boxed{2} \cdot \boxed{2} \cdot \boxed{5} \cdot \boxed{7}}{\boxed{2} \cdot \boxed{2} \cdot \boxed{3} \cdot \boxed{7}} = -\frac{1}{3}$$

$\begin{array}{l} 140 \\ \textcircled{2} \swarrow \\ 70 \\ \textcircled{2} \swarrow \\ 35 \\ \textcircled{5} \swarrow \textcircled{7} \end{array}$

$\begin{array}{l} 420 \\ \textcircled{2} \swarrow \\ 210 \\ \textcircled{2} \swarrow \\ 105 \\ \textcircled{3} \swarrow \textcircled{7} \\ 35 \\ \textcircled{5} \swarrow \textcircled{7} \end{array}$

Jan 31-9:26 AM

$$\frac{2}{x} \cdot \frac{5}{3} = \frac{2 \cdot 5}{x \cdot 3} = \frac{10}{3x} \text{ A.P.}$$

Jan 31-9:34 AM

② Division

$\frac{a}{b} \cdot \frac{c}{d} \leftarrow \text{flip}$
 Keep Change to Multiplication
 $\frac{a}{b} \cdot \frac{d}{c} = \frac{ad}{bc}$
 * Key: Do KCF /st

$\frac{8}{11} \div \frac{3}{4}$
 K C F
 $\frac{8}{11} \cdot \frac{4}{3} = \frac{32}{33} \text{ A.P.}$

Jan 31-9:37 AM

Alternate Form

$$\frac{\frac{a}{b} \cdot c}{\frac{c}{d} \cdot f} = \frac{a}{b} \cdot \frac{d}{c} = \frac{ad}{bc}$$

$$\frac{\frac{5}{8} \cdot c}{\frac{3}{1} \cdot f} = \frac{5}{8} \cdot \frac{1}{3} = \frac{5}{24}$$

$$\frac{7}{\frac{2}{x}} = \frac{7}{1} \cdot \frac{x}{2} = \frac{7x}{2}$$

Jan 31-9:41 AM

③ Addition with Like Denominators

$$\frac{a}{b} \pm \frac{c}{b} = \frac{a \pm c}{b}$$

Common Denominator "like"

$$\frac{2}{5x} - \frac{4}{5x} = \frac{2-4}{5x} = \frac{-2}{5x} = -\frac{2}{5x}$$

Jan 31-9:44 AM