


September 2, 2016
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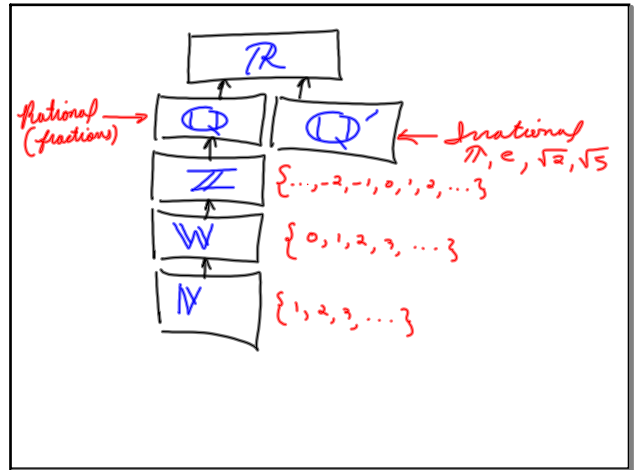
Sep 2-10:50 AM

Fractions are my Friends!


Sep 2-11:11 AM

Fractions
 ① Fundamental Principle
 $\frac{a}{b} \cdot \frac{c}{c} = \frac{a \cdot c}{b \cdot c} = \frac{a}{b} \cdot 1 = \frac{a}{b}$
 $a, b, c \in \mathbb{R}$
 $\frac{5}{7} \cdot \frac{5}{5} = \frac{25}{35}$
 $\frac{25}{35} = \frac{5 \cdot 5}{7 \cdot 5} = \frac{5}{7}$

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Mult.
 $\frac{a}{b} \cdot \frac{c}{d} = \frac{ac}{bd}$
 $\frac{5}{7} \cdot \frac{1}{2} = \frac{5}{14}$
 $\frac{3}{4} \cdot \frac{8}{13} = \frac{3 \cdot 8}{4 \cdot 13} = \frac{24}{52} = \frac{3 \cdot 2 \cdot 4}{4 \cdot 13} = \frac{6}{13}$

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Division
 Keep Change Flip
 $\frac{a}{b} \div \frac{c}{d} = \frac{a}{b} \cdot \frac{d}{c} = \frac{ad}{bc}$
 Complex Fractions
 $\frac{\frac{a}{b}}{\frac{c}{d}} = \frac{a}{b} \cdot \frac{d}{c} = \frac{ad}{bc}$
 $\frac{2}{x} \div \frac{3}{x^2} = \frac{2}{x} \cdot \frac{x^2}{3} = \frac{2 \cdot x \cdot x}{3} = \frac{2x^2}{3}$

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Addition
 • Like Denominator

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

$$\frac{8}{5} - \frac{2}{5} = \frac{8-2}{5} = \frac{6}{5}$$

$$\frac{2x^2}{x-3} + \frac{5}{x-3} = \frac{2x^2 + 5}{x-3}$$

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Addition
 • Unlike Denominators

$$\frac{a}{b} \pm \frac{c}{d} = \frac{ad \pm bc}{bd}$$

$$\frac{2}{5} - \frac{3}{11} = \frac{2(11) - 3(5)}{5 \cdot 11 = 55} = \frac{22 - 15}{55}$$

① $\frac{2}{5} \cdot \frac{11}{11} = \frac{22}{55}$

② $-\frac{3}{11} \cdot \frac{5}{5} = -\frac{15}{55}$

$$\frac{22}{55} - \frac{15}{55} = \frac{22-15}{55} = \frac{7}{55}$$

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CD: x^2y

$$\frac{2}{x^2} + \frac{5}{y} = \frac{2y + 5x^2}{x^2y}$$

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