

September 2, 2016
58 avg

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CORE 1.1

- Algebra's Power Tools (3mg #3)
- Addition
 - Same sign
 - Different sign

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Different sign addition

$(+) + (-)$
 $(-) + (+)$ } subtracting the smaller abs integer from the larger & using the "sign" of the larger

$3 - 7 = (3) + (-7)$

$3 - 7$

Order Property

① $|3| = 3$
 ② $|7| = 7$

$a < b$

$7 - 3 = -4$

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multiplication / Division

- Same sign

$(+) \cdot (+)$
 $(-) \cdot (-)$ } = (+)

$\frac{(+)}{(+)}$ or $\frac{(-)}{(-)}$ } = (+)

$(-5)(-3) = +15$

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- Different signs

$(+) (-)$
 $(-) (+)$ } = (-)

$\frac{(+)}{(-)}$ or $\frac{(-)}{(+)}$ } = (-)

$+15(-2) = -30$

$\frac{-15}{+3} = -5$

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Exponents

a^n ← Exponent
 ↑ Base
 = $\underbrace{a \cdot a \cdot a \cdot \dots \cdot a}_n$
 n factors of a being multiplied

② = exp

$5^3 = 5 \cdot 5 \cdot 5$
 ↑ Base = $2 \cdot 5 \cdot 5$
 = 125

x^{196}

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Exponent Issues

$$\begin{aligned} (-6)^2 &= (-6) \cdot (-6) = 36 \\ \text{Base} & \quad \text{exponent} \\ \text{or} & \\ -6^2 &= (-1) \cdot 6^2 \\ &= (-1) \cdot 6 \cdot 6 \\ &= (-6) \cdot 6 \\ &= -36 \end{aligned}$$

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$$\begin{aligned} (-2)^3 &= (-2) \cdot (-2) \cdot (-2) \\ \text{Base} & \quad \text{exponent} \\ &= (4) \cdot (-2) \\ &= -8 \\ -2^3 &= (-1) \cdot 2^3 \\ &= (-1) \cdot 2 \cdot 2 \cdot 2 \\ &= (-2) \cdot 2 \cdot 2 \\ &= (-4) \cdot 2 \\ &= -8 \end{aligned}$$

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