

Biggest Rule to live by in  
"Algebraic World"

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# NEAT & PICKY RULES

$$\sinh \quad (x + a)^n = \sum_{k=0}^n \binom{n}{k} x^k a^{n-k}$$

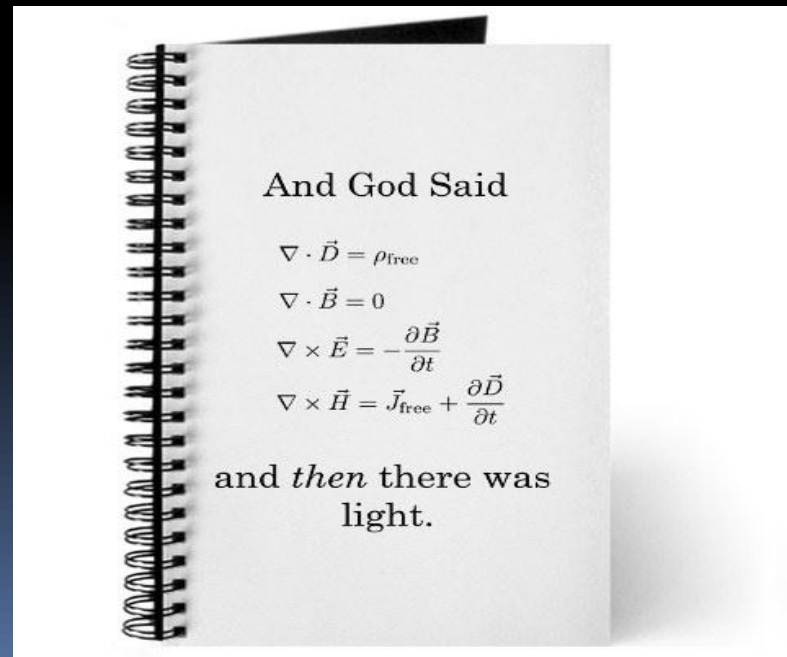


Rule #1:

Show each step in solving the equation.

The result is your next equation line.

Neat:



## Rule #2:

Write in a vertical arrangement so that your solution is the last line.

Example:  $y = x + 5$     $y = 2x + 2$

$$x + 5 = 2x + 2$$

$$\begin{array}{r} -x \qquad -x \\ \hline 5 = x + 2 \\ -2 \qquad -2 \\ \hline \end{array}$$

$$3 = x$$



$$y = 2x + 2$$

$$y = 2(3) + 2 = 8$$

**Solution: (3, 8)**

# Rule #4



- Balance your equation! What ever you so to one side of the equation you must do to the other side.
- Example:

Solve for  $x$ :

$$8x - 5 = 3x + 20$$
$$8x - 5 - 3x = 3x + 20 - 3x$$
$$5x - 5 = 20$$
$$5x - 5 + 5 = 20 + 5$$
$$5x = 25$$
$$\frac{5x}{5} = \frac{25}{5}$$
$$x = 5$$



# Rule #5

- The solution must be written with the variable on the left of the equal sign.
- Examples:
  - $X=5$
  - $5+x=10$
  - $X=5$



# Rule #6

- You must show a check! Substitute your solution to show it works your answer will always be correct
- Examples:

$$\begin{aligned}x^2 + 3x - 5x - 7 &= 0 \\x^2 - 2x - 7 &= 0 \\x &= \frac{-(-2) \pm \sqrt{(-2)^2 - 4(1)(-7)}}{2(1)} \\&= \frac{2 \pm \sqrt{4 + 28}}{2} \\&= \frac{2 \pm \sqrt{32}}{2} \\&= \frac{2 \pm 4\sqrt{2}}{2} \\&= \frac{2}{2} \pm \frac{4}{2}\sqrt{2} \\&= 1 \pm 2\sqrt{2}\end{aligned}$$

# Rule #7

Write neatly!!

Handwritten solution for the equation  $2x - 3 = 5$  on grid paper. The equation is written at the top. Below it, two methods are shown, separated by a vertical line.

Method A:

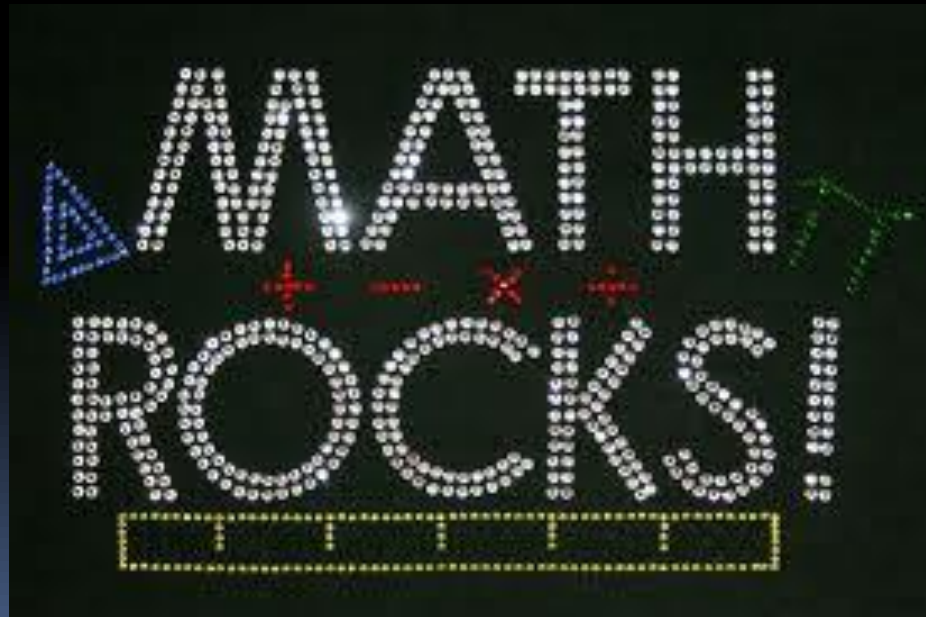
$$\begin{aligned} \boxed{A} \quad & 2(4) - 3 = 5 \\ & \text{so } x = 4 \end{aligned}$$

Method B:

$$\begin{aligned} \boxed{B} \quad & 2x - 3 = 5 \\ & +3 \quad +3 \\ & \underline{2x = 8} \\ & \underline{2} \quad \underline{2} \\ & x = 4 \\ & 2(4) - 3 = 5 \checkmark \end{aligned}$$

Now you have learned algebra rules to live by.

You will live happier than ever.





# Algebra ROCKS

- Algebra ROCKS

