Solving Formulas For A Variable

$3x-1=5$

$E=mc^2$

NOTE: AT ANY STEP COMBINE LIKE TERMS AND COMBINE NUMBERS

1. GET RID OF PARENTHESIS (VIA DIST. PROP.)
2. GET RID OF FRACTIONS (MULTIPLY EVERYTHING BY LCM OF ALL DENOMINATORS)
3. GET EVERYTHING WITH THE VARIABLE WE ARE SOLVING FOR ON ONE SIDE, EVERYTHING ELSE ON OTHER SIDE
4. IF THE VARIABLE WE ARE SOLVING FOR IS IN 2 OR MORE TERMS, FACTOR IT OUT
5. ~~ROOT~~ DIVIDE BOTH SIDES BY WHAT IS IN FRONT OF/ BEHIND THE VARIABLE WE ARE SOLVING FOR

#1

$A=BC$ FOR B

$\frac{A}{C}=\frac{BC}{C}$

$\frac{A}{C}=B$

#2

$W=AECD$ FOR E

$\frac{W}{ACD}=\frac{AECD}{ACD}$

$\frac{W}{ACD}=E$

#3

$C=\frac{1}{5}AB$ FOR B

$5C=5\left(\frac{1}{5}AB\right)$

$5C=AB$

$\frac{5C}{A}=\frac{AB}{A}$

$\frac{5C}{A}=B$

#4

$G=5A+2B-3C$ FOR B

$G-5A+3C=2B$

$\frac{G-5A+3C}{2}=\frac{2}{2}B$

$\frac{G-5A+3C}{2}=B$

#5

$A=3c(D+e)$ FOR e

$A=3cD+3ce$

$A-3cD=3ce$

$\frac{A-3cD}{3c}=\frac{3ce}{3c}$

$\frac{A-3cD}{3c}=e$

$\frac{A}{3c}-D=c$

#6

$15x-5y=25$ FOR y

$15x-25=5y$

$\frac{15}{5}x-\frac{25}{5}=\frac{5}{5}y$

$3x-5=y$

#7

$\frac{2}{5}x-\frac{7}{3}y=-2$ FOR y

$15\left(\frac{2}{5}x\right)-15\left(\frac{7}{3}y\right)=15(-2)$

$6x-35y=-30$

$6x+30=35y$

$\frac{6}{35}x+\frac{30}{35}=\frac{35}{35}y$

$\frac{6}{35}x+\frac{6}{7}=y$

ex: $\frac{A}{B}=\frac{C}{D}$ FOR D

$BD\left(\frac{A}{B}\right)=BD\left(\frac{C}{D}\right)$

$AD=BC$

$\frac{AD}{A}=\frac{BC}{A}$

$D=\frac{BC}{A}$