

TYPE OF EQN	STRATEGY	SOLUTIONS
Basic (linear) ex) $2(x+3)=5$	Simplify first; then PEMDAS in reverse to isolate the variable	one soln, no soln, infinite soln
Multiple Variables ex) $x=zy+tr$	Use basic solving strategy - isolate the variable by doing inverse operations on the other variables.	get another equation
Quadratics $ax^2+bx+c=0$	<ol style="list-style-type: none"> ① GCF ② use sq root if bx is MIA ③ factoring $\rightarrow a=1 \rightarrow$ factors of "c" that add up to "b" $\rightarrow a \neq 1 \rightarrow$ AC method ④ Quadratic formula 	two solns [sometimes one soln or no soln]
Abs. Value ex) $ x-3 =12$	<ol style="list-style-type: none"> ① Isolate abs value ② Undo abs value by making other side \pm, ③ Split into two eqns ④ Solve 	two solns
Radical ex) $\sqrt{x-1}=3$	<ol style="list-style-type: none"> ① Isolate $\sqrt{\quad}$ ② Undo $\sqrt{\quad}$ by squaring both sides, ③ Solve, ④ Check for extraneous solns 	One soln, two soln extraneous soln [sometimes no soln]
Rational ex) $\frac{1}{x} + \frac{x}{5} = \frac{2x}{12}$	<ul style="list-style-type: none"> • find CD (methods 1+2) • cross multiply - but first add or subtract fractions, if necessary <p style="text-align: center;">Algorithm: $\frac{a}{b} \pm \frac{c}{d} = \frac{ad \pm cb}{bd}$</p> <ul style="list-style-type: none"> • check for extran. soln 	One soln, two solns, extraneous soln [sometimes no soln]

TYPE OF EQN	STRATEGY	SOLUTIONS
Linear Inequalities ex) $y < 2x - 3$	<ul style="list-style-type: none">• Graph lines, shade region• Algebraically - traditional solving, flip inequality when dividing/multiplying by a negative number	Graph: Shaded region Algebraically: $x >$, $x <$, $x \geq$, $x \leq$