Solving Quadratics by Factoring

Zero-Product Property

If $(a)(b)=0$, then $a=0$ or $b=0$.

Steps to solve by factoring:

1. Write in standard form, $ax^2+bx+c=0$ by moving all terms to 1 side so it equals 0.
2. Factor (GCF, trinomial, diff. of squares...)
3. Set each factor equal to 0 + solve.

Solve by factoring.

1. $x^2+18=9x$

$-9x \quad -9x$

$1x^2-9x+18=0$

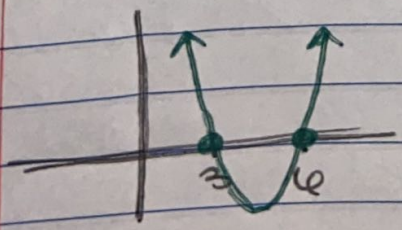
"easier" $a=1$, 18, -6×-3, -9, add

$(x-6)(x-3)=0$

$x-6=0 \quad x-3=0$

$+6 \ +6 \quad +3 \ +3$

$x=6 \quad x=3$



2. $5b^2+9b=2$

$-2 \quad -2$

$a=5$, $b=9$, $c=-2$, $a \neq 1$

$5b^2+9b-2=0$ "harder"

$(5b^2+10b)+(-1b-2)=0$

$5b \quad 5b \quad -1 \quad -1$

-10, 10×-1, 9

$5b(b+2)-1(b+2)=0$

$(5b-1)(b+2)=0$

$5b-1=0 \quad b+2=0$

$+1 \ +1 \quad -2 \ -2$

$\frac{5b}{5}=\frac{1}{5} \quad b=-2$

$b=1/5$

3. $(b-4)(b-4)=0$

☆ already factored

$b-4=0$

$b=4$ twice