We can solve

$$(3x+2)(x+3)=0$$

$$3x+2=0 \qquad x+3=0$$

$$\underline{-2 \quad -2} \qquad \underline{-3 \quad -3}$$

$$3x=-2 \qquad x=-3$$

$$x=-2/3$$

How can we solve

$$3x^2+11x+6=0 \quad ?$$

$18x^2$

$9x$ $\quad$ $2x$

$11x$

$$3x^2+9x+2x+6 \quad =0$$

$$(3x^2+9x)+(2x+6) \quad =0$$

$$3x(x+3)+2(x+3) \quad =0$$

$$(3x+2)(x+3) \quad =0$$

$$3x+2=0 \qquad x+3=0$$

$$\underline{-2 \quad -2} \qquad \underline{-3 \quad -3}$$

$$\frac{3x}{3}=\frac{-2}{3} \qquad x=-3$$

$$x=-2/3$$

Zero Product Property!

Solve by Factoring

① make sure it equals zero

② Factor

$$6n^2+7n=20$$

$$\underline{-20 \quad -20}$$

$$6n^2+7n-20=0$$

$-120n^2$

$15n$ $\quad$ $-8n$

$7n$

$$(6n^2+15n)+(-8n-20)=0$$

$$3n(2n+5)-4(2n+5)=0$$

$$(3n-4)(2n+5)=0$$

$$3n-4=0 \qquad 2n+5=0$$

③ Zero Product Prop

$$n=4/3 \text{ OR } n=-5/2$$

$3k^2+72=33k$

$5x^2+27x+10=0$

$-2v^2-v+12=-3v^2+6v$

Victor hit a baseball into the air that modeled the equation $h=-16t^2+36t+1$ where h is the height in feet and t is the time in seconds. How long was the ball in the air if Casey caught the ball 9 ft above the ground?