Questions From Homework

(31) b) $\left(\sqrt{x+11}\right)^2 = (x-9)^2$

$x+11 = x^2-18x+81$

$0 = x^2-19x+70$

$0 = (x-5)(x-14)$

$x-5=0$ | $x-14=0$

$x=5$ | $x=14$

Test $x=5$

$\sqrt{(5)+11} = (5)-9$

$\sqrt{16} = -4$

$4 \neq -4$

Not a Solution.
"Extraneous Root"

Test $x=14$

$\sqrt{(14)+11} = (14)-9$

$\sqrt{25} = 5$

$5 = 5$ ✓

$x=14$ is a solution

Absolute Inequalities

$$|x-1| \le 5$$

① $x-1 \le 5$

$x \le 6$

② $x-1 \ge -5$

$x \ge -4$

$-4 \le x \le 6$

Absolute Inequalities

$$|2x+3| \geq 9$$

① $2x+3 \geq 9$

$2x \geq 6$

$x \geq 3$

② $2x+3 \leq -9$

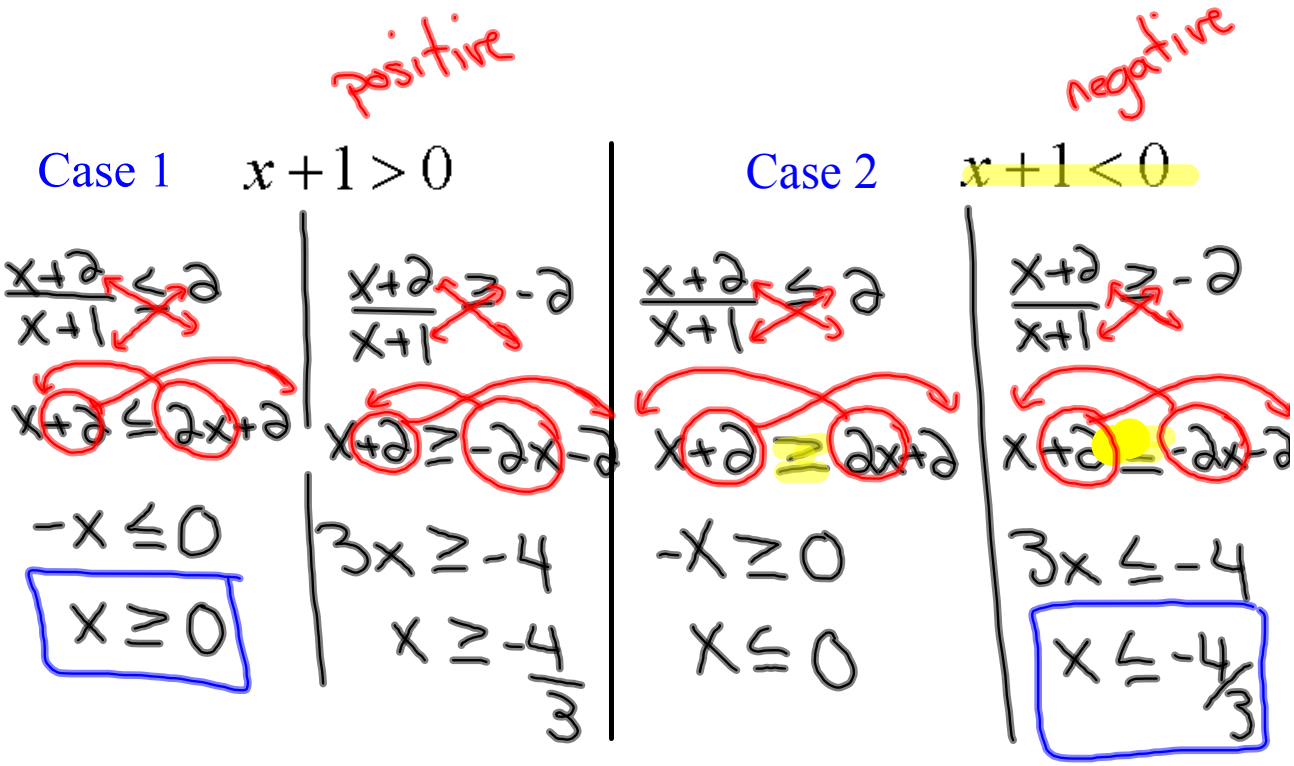
$2x \leq -12$

$x \leq -6$

Absolute Rational Inequalities

$$\left|\frac{x+2}{x+1}\right| \le 2$$

① $\frac{x+2}{x+1} \le 2$ ② $\frac{x+2}{x+1} \ge -2$



Absolute Inequalities

$$5 < |x + 2| < 10$$

① $5 < x + 2 < 10$

$3 < x < 8$

② $-5 > x + 2 > -10$

$-7 > x > -12$

$-12 < x < -7$

Homework