11 - 3
Radical Equations

Ex: $\sqrt{x+1} + 7 = 10$

$-7 \quad -7$

$(\sqrt{x+1})^2 = 3^2$

$x + 1 = 9$

$-1 \quad -1$

$\boxed{x = 8}$

Ex: $\sqrt{x-3} + 8 = 15$

$-8 \quad -8$

$\left(\sqrt{x-3}\right)^2 = 7^2$

$x - 3 = 49$

$+3 \quad +3$

$x = 52$

Ex: $\left(\sqrt{x+2}\right)^2 = (x-4)^2$

$(x-4)(x-4)$

$x+2 = x^2 - 8x + 16$

$-x \quad -2 \qquad -x \quad -2$

$x^2 - 4x - 4x + 16$

-7
-2

$0 = x^2 - 9x + 14$

$0 = (x-7)(x-2)$

$x = 7$ $\quad x \neq 2$

Ex: $4 + \sqrt{x - 2} = x$

$-4 \qquad\qquad -4$

$\left(\sqrt{x-2}\right)^2 = (x-4)(x-4)$

$x - 2 = x^2 - 8x + 16$

$-x + 2 \qquad -x \quad +2$

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

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

$x = 6$ ~~$x = 3$~~

Homework:

p. 601 #18 - 26 even, 36 - 42 even