Solve. Radical Equations

Solve ?

Check

Easy

$\sqrt{x+4} = 7$

$(\sqrt{x+4})^2 = 7^2$

$x+4 = 49$

$x = 45$

Check → $\sqrt{45+4} = 7$

$\sqrt{49} = 7$

$7 = 7$ ✓

Solve & Check

$\sqrt{x+1} + 3 = 2x$

$-3 \quad -3$

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

$x+1 = 4x^2-12x+9$

$-x \quad -x$

$1 = 4x^2-13x+9$

$-1 \quad -1$

$0 = 4x^2-13x+8$

$a=4$

$b=-13$

$c=8$

$x = \frac{-b \pm \sqrt{b^2-4ac}}{2a}$

$x = \frac{-(-13) \pm \sqrt{(-13)^2-4(4)(8)}}{2(4)}$

$\sqrt{41}$

$x = \frac{13 \pm \sqrt{41}}{8}$

$x \approx 2.42$ or $.82$

p542
#11-20

$x = 2.42$

$\sqrt{2.42+1} + 3 = 2(2.42)$

$\sqrt{3.42} + 3 = 4.84$

$4.85 \neq 4.84$

$x = .82$

$\sqrt{.82+1} + 3 = 2(.82)$

$\sqrt{1.82} + 3 = 1.64$

$4.35 \neq 1.64$