$\sqrt{}$ = SQRT of a #
cannot equal
a neg. # = NO SOLUTION

OCTOBER 29, 2012

#W Review 7.5 & 7.6

7.6

purple packet

$$\sqrt[3]{2x-3} + 2 = -5$$
$$\phantom{\sqrt[3]{2x-3}} +\frac{-2}{} \quad +\frac{-2}{}$$

$$\sqrt[3]{2x-3} = -3$$

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

$$2x - 3 = -27$$
$$ +3 \qquad +3$$
$$\frac{2x = -24}{2} \qquad \frac{}{2}$$

$$\boxed{x = -12}$$

check: $3\sqrt{2(-12)-3} - 2 = -5$

$3\sqrt{-24-3} - 2 = -5$

$3\sqrt{-27} - 2 = -5$

$-3 - 2 = -5$

$-5 = -5$ ✓'s

7.6 #21 $\sqrt{x-3} + \sqrt{x+2} = 5$

$$\left(\sqrt{x-3} + \sqrt{x+2}\right)^2 = (5)^2$$

$$\left(\sqrt{x-3} + \sqrt{x+2}\right)\left(\sqrt{x-3} + \sqrt{x+2}\right) = 25$$

OR

$$\sqrt{x-3} = 5 - \sqrt{x+2}$$

$$\left(\sqrt{x-3}\right)^2 = \left(5 - \sqrt{x+2}\right)^2 \quad \text{FOIL}$$

$$x - 3 = (5 - \sqrt{x+2})(5 - \sqrt{x+2})$$

$$x - 3 = 25 - 5\sqrt{x+2} - 5\sqrt{x+2} + x + 2$$

$$x - 3 = 27 + x - 10\sqrt{x+2}$$

$$\frac{-x - 27 \quad -27 \quad -x}{-30 = -10\sqrt{x+2}}$$

$$\frac{-30}{-10} = \frac{-10\sqrt{x+2}}{-10}$$

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

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

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

$$9 = x + 2$$

$$\frac{-2 \qquad -2}{\boxed{7 = x}}$$

Check: $\sqrt{x-3} + \sqrt{x+2} = 5$

$\sqrt{7-3} + \sqrt{7+2}$

$\sqrt{4} + \sqrt{9}$

$2 + 3 = 5$ ✓'s