Algebra II Section 8-5

THINGS TO LOOK FOR:

1) An even root can never equal a negative number.

2) You must check even root problems where there

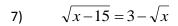
are multiple variables involved.

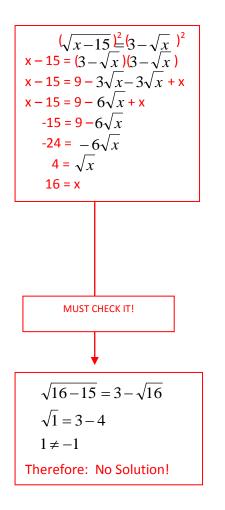
Question??? When solving an equation,

how do you get rid of an addition?

how do you get rid of a multiplication?

so...how do you get rid of a (square root?)² A(fourth root?)⁴ A(cubed root?)³ multiple variables, must check it! **EXAMPLES:** $\sqrt{2y+3} = 7$ $\sqrt[4]{3n-4} = \sqrt[4]{n-2}$ 2) $-3 = \sqrt[3]{y-2}$ 1) 3) $(-3)^{3} = (\sqrt{y-2})^{3}$ -27 = y - 2 $(\sqrt{2y+3})^2 = (7)^2$ 2y + 3 = 49 $\sqrt[4]{3n}^{4}(4) = \sqrt[4]{n}^{4}(2)$ (3n - 4 = n - 22y = 46-25 = y2n - 4 = -2y = 23 2n = 2n = 1 $\sqrt[4]{3(1)-4} = \sqrt[4]{1-2}$ THE ONLY RULE: 1) Must get the radical by itself first before squaring, cubing, etc. $\sqrt[4]{3-4} = \sqrt[4]{-1}$ stop, real#'s only $2x^{\frac{1}{3}} + 8 = 0$ 6) $5 = 17 + 3(x-2)^{\frac{1}{2}}$ $\sqrt{-5n+19} + 10 = 11$ 4) 5) $2\sqrt[3]{x} + 8 = 0$ subt. 10 first (must have root by itself) $5 = 17 + 3\sqrt{x - 2}$ $(\sqrt{-5n+19})^2 = (1)^2$ $2\sqrt[3]{x} = -8$ $-12 = 3\sqrt{x-2}$ -5n + 19 = 1 $\sqrt[3]{x} = -4$ -5n = -18 $-4 = \sqrt{x-2}$ $(\sqrt[3]{x})^{3} = (-4)^{3}$ stop! square roots cannot n = 3.6 equal negative answers! x = -64 Homework: pg 425 1-3, 11-18, 23-26 or pg 425 11-18, 23-28 THE TOUGH ONE. If $\sqrt{x-15} = 3 - \sqrt{x}$ $\sqrt{y+3} - \sqrt{y-17} = 2$ 7) 8) there is more than one radical, get the see next page for #7 & #8 "toughest" one by itself, then.... ????





$$8) \qquad \sqrt{y+3} - \sqrt{y-17} = 2$$

$$\sqrt{y+3} = \sqrt{y-17} + 2$$

$$(\sqrt{y+3})^{2} = (\sqrt{y-17} + 2)^{2}$$

$$y+3 = (\sqrt{y-17} + 2)(\sqrt{y-17} + 2)$$

$$y+3 = y - 17 + 4\sqrt{y-17} + 4$$

$$y+3 = y - 13 + 4\sqrt{y-17}$$

$$3 = -13 + 4\sqrt{y-17}$$

$$16 = 4\sqrt{y-17}$$

$$16 = 4\sqrt{y-17}$$

$$16 = y - 17$$

$$33 = y$$
MUST CHECK IT!
$$\sqrt{33+3} - \sqrt{33-17} = 2$$

$$\sqrt{36} - \sqrt{16} = 2$$

$$6 - 4 = 2$$
Checks! Therefore: y = 33