Sec 1.6.2 Solving Equations with Square Roots

-Steps-

- 1. Isolate radical (if possible).
 - 2. Raise to a power
 - 3. Solve remaining equation
 - 4. Check for extraneous

solutions.*

EVEN POWER

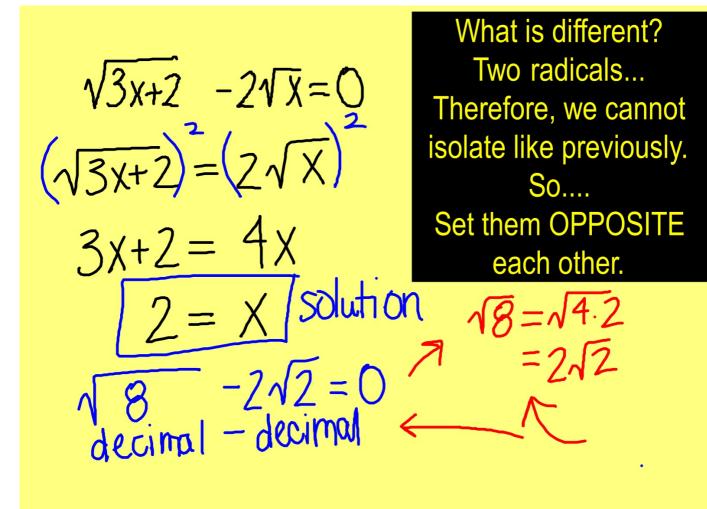
*when raising equations to powers extra solutions often "pop up"....they're called extraneous, and not truly solutions.

$$3\sqrt{16/9}-4=0$$
 $3(4/3)-4=0$

$$3\sqrt{x}-4=0$$

 $3\sqrt{x}=4$
 $(\sqrt{x}=4/3)$
 $x=16/9$

$$\sqrt{2x-1} + 2 = X$$
 $(\sqrt{2x-1}) = (x-2)$
 $2x-1 = x^2 - 4x + 4$
 $0 = x^2 - 6x + 5$
 $0 = (x-5)(x-1)$
 $x = 5$
 $x =$



$$(x-4)^{2}(2x)^{2} = 8-4=16$$

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

$$x^{2}-10x+16=0$$

$$(x-8)(x-2)=0$$

$$x=842$$

 $\sqrt{3x+1} - \sqrt{x+4} = 1$ $\sqrt{3x+1} = (1+\sqrt{x+4})^2$ $3x+1 = 1+2\sqrt{x+4}$ $2x-4 = 2\sqrt{x+4}$ $2(x-2)^2 = (\sqrt{x+4})^2$ $x^2-4x+4=x+4$ $x^2-5x=0$ x(x-5)=0 x=x+5 = 0Experimense?

Suggested Practice

Sec 1.6 page 178 11-25 odds

Algebra III- Stop at 21 and also try the below

Solve
$$\sqrt{2x+3} - \sqrt{x+2} = 2$$
 $\sqrt{3x-5} = 2 - \sqrt{x-1}$

11. 6

21. 12

13. 6

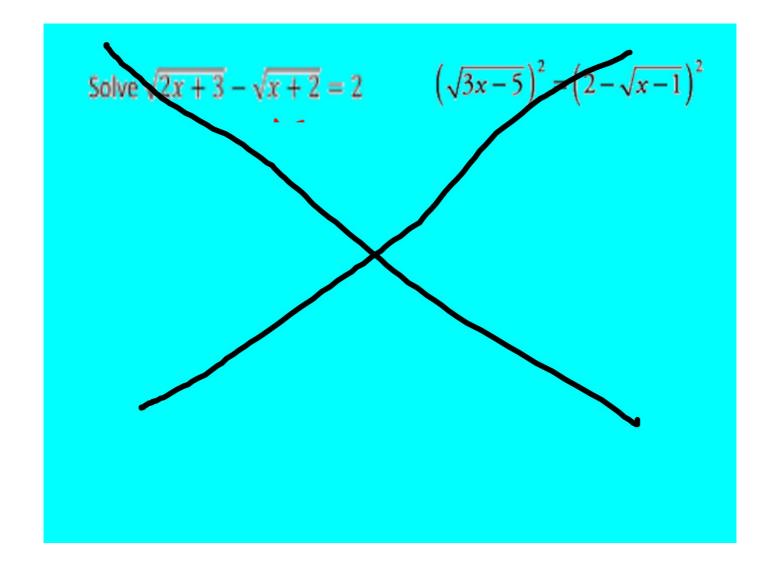
23. 8

15. -6

25. Originally X=9

17, 10

- 27.
- 19. -5



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