# I hear you like radicals, so I put a radical in your radical, so you can radical while you radical.


It looks tougher than it is… I promise.

We do the same things.

1. Isolate the radical
   - ➢ Get the root alone on one side of the equation
2. Square both sides
   - ➢ This gets rid of the radical. Back to easy mode after this!
     - Now we just have to do this step one more time.
3. Solve for x
4. Check for extraneous roots
   - ➢ Sometimes you may find answers that are not allowed. Non Permissible Values (NPV)

$$\sqrt{4x+5} - \sqrt{2x-1} = 2$$

$$\left(\sqrt{4x+5}\right)^2 = \left(2 + \sqrt{2x-1}\right)^2$$

$$4x+5 = 4 + 2\sqrt{2x-1} + 2\sqrt{2x-1} + 2x - 1$$

$$4x+5 = 4 + 4\sqrt{2x-1} + 2x - 1$$

$$4x + 5 - 4 - 2x + 1 = 4\sqrt{2x-1}$$

$$2x + 2 = 4\sqrt{2x-1}$$

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

$$x^2 + 2x + 1 = 4(2x-1)$$

$$x^2 + 2x + 1 = 8x - 4$$

$$x^2 + 2x - 8x + 1 + 4 = 0$$

$$x^2 - 6x + 5 = 0$$

$m \rightarrow 5$ ✓

$a \rightarrow -6$ ✓

~~6, -1~~

$-5, -1$

$$x^2 - 5x - x + 5$$

$$x(x-5) - (x-5)$$

$$(x-5)(x-1)$$

$x = 5$ or $x = 1$ ✓ ✓

$$7 + \sqrt{3x} = \sqrt{5x + 4} + 5$$

$\sqrt{3x} = \sqrt{5x+4} + 5 - 7$

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

$3x = 5x + 4 - 4\sqrt{5x+4} + 4$

$3x - 5x - 4 - 4 = -4\sqrt{5x+4}$

$-2x - 8 = -4\sqrt{5x+4}$

$(x + 4)^2 = (2\sqrt{5x+4})^2$

$x^2 + 8x + 16 = 4(5x + 4)$

$x^2 + 8x + 16 = 20x + 16$

$x^2 + 8x - 20x + 16 - 16 = 0$

$x^2 - 12 = 0$

$x(x - 12) = 0$

$x = 0$ or $x = 12$

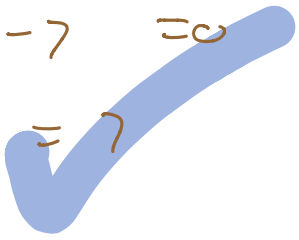
$$\sqrt{2x-5} = \sqrt{x+2}$$

$2x-5 = x+2$

$2x - x - 5 - 2 = 0$

$x - 7 = 0$

$x = 7$



HW: Pg: 301
#9abc,10