

Day 5

Name: <u>Key</u>	Date:
Topic:	Class:

Main Ideas/Questions	Notes
STEPS TO SOLVE Radical Equations	① Make sure the radical is ISOLATED.
	② SQUARE BOTH SIDES OF THE EQUATION to eliminate the radical sign.
	③ SOLVE the remaining equation.
	④ CHECK for <u>EXTRANEUS SOLUTIONS</u> . ★
What are Extraneous Solutions?	you can't square root negatives & it has to work in original equation

Directions: Solve each equation. Check all solutions.

<p>1. $\sqrt{x} = 9^2$</p> <p>$x = 81$</p>	<p>2. $\sqrt{m+5} = 2^2$</p> <p>$m+5 = 4$</p> <p>$-5 \quad -5$</p> <p>$m = -1$</p> <p>$-1+5 = 4 \checkmark$</p>
<p>3. $6^2 = \sqrt{4y}^2$</p> <p>$\frac{36}{4} = \frac{4y}{4}$</p> <p>$9 = y$</p> <p>$4 \cdot 9 = 36 \checkmark$</p>	<p>4. $\sqrt{\frac{a}{3}} = 7^2$</p> <p>$\frac{a}{3} = 49 \cdot 3$</p> <p>$a = 147$</p> <p>$\frac{a}{3} = \frac{49}{1}$</p> <p>$a = 147$</p> <p>$\frac{147}{3} = 49 \checkmark$</p>
<p>5. $\sqrt{5m-1} = 13^2$</p> <p>$5m-1 = 169$</p> <p>$+1 \quad +1$</p> <p>$5m = 170$</p> <p>$\frac{5m}{5} = \frac{170}{5}$</p> <p>$m = 34$</p> <p>$5(34) - 1 = 169 \checkmark$</p>	<p>6. $3 = \sqrt{35-2w}^2$</p> <p>$9 = 35 - 2w$</p> <p>$-35 \quad -35$</p> <p>$-26 = -2w$</p> <p>$\frac{-26}{-2} = \frac{-2w}{-2}$</p> <p>$13 = w$</p> <p>$35 - 2(13) = 9 \checkmark$</p> <p>$35 - 26 = 9$</p>

Day 5

<p>7. $\sqrt{x} - 7 = -6$ $+7 \quad +7$ $\sqrt{x} = 1$ $x = 1$</p>	<p>8. $-50 = -10\sqrt{n}$ $\frac{-50}{-10} = \frac{-10\sqrt{n}}{-10}$ $5 = \sqrt{n}$ $25 = n$</p>
<p>9. $1 - \sqrt{x+2} = 4$ $-\sqrt{x+2} + 1 = 4$ $-1 \quad -1$ $-\sqrt{x+2} = 3$ $\frac{-1}{-1} \quad \frac{3}{-1}$ $\sqrt{x+2} = (-3)^2$ $x+2 = 9$ $-2 \quad -2$ $x = 7$ extraneous $7+2=9$ $1-\sqrt{9}=4$ $1-3=4$</p>	<p>10. $-8\sqrt{2c+3} = -40$ $\frac{-8}{-8} \quad \frac{-8\sqrt{2c+3}}{-8}$ $\sqrt{2c+3} = 5$ $2c+3 = 25$ $2c = 22$ $c = 11$ $-8\sqrt{2(11)+3} = -40$</p>
<p>11. $2\sqrt{k-4} - 11 = -3$ $+11 \quad +11$ $2\sqrt{k-4} = 8$ $\frac{2}{2} \quad \frac{8}{2}$ $\sqrt{k-4} = 4$ $k-4 = 16$ $k = 20$ $2\sqrt{20-4} - 11 = -3$</p>	<p>12. $11 = \frac{\sqrt{8h}}{3} + 7$ $-7 \quad -7$ $3 \cdot 4 = \frac{\sqrt{8h}}{3} \cdot 3$ $12 = \sqrt{8h}$ $144 = 8h$ $\frac{144}{8} = \frac{8h}{8}$ $18 = h$ $\frac{\sqrt{8(18)}}{3} + 7 = 11$</p>
<p>13. $\sqrt{r} = \sqrt{42-2r}$ $r = 42-2r$ $+2r \quad +2r$ $3r = 42$ $\frac{3}{3} \quad \frac{42}{3}$ $r = 14$ $\sqrt{14} = \sqrt{42-2(14)}$</p>	<p>14. $\sqrt{a} = \sqrt{2a-10}$ $a = 2a-10$ $-2a \quad -2a$ $-a = -10$ $a = 10$ $\sqrt{10} = \sqrt{2(10)-10}$</p>
<p>15. $\sqrt{p+8} = \sqrt{2-p}$ $p+8 = 2-p$ $+p \quad +p$ $2p+8 = 2$ $-8 \quad -8$ $2p = -6$ $\frac{2p}{2} = \frac{-6}{2}$ $p = -3$ $\sqrt{-3+8} = \sqrt{2-(-3)}$</p>	<p>16. $\sqrt{5m-12} = \sqrt{16-2m}$ $5m-12 = 16-2m$ $+2m \quad +2m$ $7m-12 = 16$ $+12 \quad +12$ $7m = 28$ $\frac{7m}{7} = \frac{28}{7}$ $m = 4$ $\sqrt{5(4)-12} = \sqrt{16-2(4)}$</p>