

Mr. Ward Answer Key

$$2. (\sqrt{x-9})^2 = (5)^2$$

$$x-9 = 25$$

$$\boxed{x = 34}$$

$$3. (\sqrt{3x})^2 = (6)^2$$

$$3x = 36$$

$$\boxed{x = 12}$$

$$4. (\sqrt[3]{x-2})^3 = (2)^3$$

$$x-2 = 8$$

$$\boxed{x = 10}$$

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

$$\begin{array}{r} 3x-1 = 2x+4 \\ -2x \quad -2x \end{array}$$

$$x-1 = 4$$

$$\boxed{x = 5}$$

$$6. (2\sqrt{x})^2 = (\sqrt{x+9})^2$$

$$\begin{array}{r} 4x = x+9 \\ -x \quad -x \end{array}$$

$$3x = 9$$

$$\boxed{x = 3}$$

$$7. (\sqrt[5]{x+4})^5 = (\sqrt[5]{3x-2})^5$$

$$\begin{array}{r} x+4 = 3x-2 \\ -x \quad -x \end{array}$$

$$4 = 2x-2$$

$$6 = 2x$$

$$\boxed{x = 3}$$

$$8. (2\sqrt[3]{x})^3 = (\sqrt[3]{x+7})^3$$

$$\begin{array}{r} 8x = x+7 \\ -x \quad -x \end{array}$$

$$7x = 7$$

$$\boxed{x = 1}$$

$$9. \sqrt{x+6} - \sqrt{2x-4} = 0$$

$$(\sqrt{x+6})^2 = (\sqrt{2x-4})^2$$

$$\begin{array}{r} x+6 = 2x-4 \\ -x \quad -x \end{array}$$

$$6 = x-4$$

$$\boxed{x = 10}$$

$$10. (4\sqrt{x+1})^2 = (3\sqrt{x+2})^2$$

$$16(x+1) = 9(x+2)$$

$$\begin{array}{r} 16x+16 = 9x+18 \\ -9x \quad -9x \end{array}$$

$$7x+16 = 18$$

$$7x = 2$$

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

$$11. (\sqrt{x+56})^2 = (x)^2$$

$$x+56 = x^2$$

$$x^2 - x - 56 = 0$$

$$(x-8)(x+7) = 0$$

$$\boxed{x = 8, -7}$$

$$12. (\sqrt{x+18})^2 = (x-2)^2$$

$$x+18 = x^2 - 4x + 4$$

$$x^2 - 5x - 14 = 0$$

$$(x-7)(x+2) = 0$$

$$\boxed{x = 7, -2}$$

$$13. (\sqrt{3x-11})^2 = (x-3)^2$$

$$3x-11 = x^2-6x+9$$

$$x^2-9x+20 = 0$$

$$(x-5)(x-4) = 0$$

$$x = 5, 4$$

$$14. \sqrt{x+6} - x = 4$$

$$(\sqrt{x+6})^2 = (x+4)^2$$

$$x+6 = x^2+8x+16$$

$$x^2+7x+10 = 0$$

$$(x+5)(x+2) = 0$$

$$x = -5, -2$$

$$15. (\sqrt{-x-1})^2 = (x+1)^2$$

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

$$x^2+3x+2 = 0$$

$$(x+2)(x+1) = 0$$

$$x = -2, -1$$

$$16. (\sqrt{15x+10})^2 = (2x+3)^2$$

$$15x+10 = 4x^2+12x+9$$

$$4x^2-3x-1 = 0$$

$$(4x+1)(x-1) = 0$$

$$x = 1, -1/4$$

$$17. [(x-5)^{1/2}]^2 = [3]^2$$

$$x-5 = 9$$

$$x = 14$$

$$18. [(2x+1)^{1/3}]^3 = [2]^3$$

$$2x+1 = 8$$

$$2x = 7$$

$$x = 7/2$$

$$19. [(4x+5)^{1/2}]^2 = [x]^2$$

$$4x+5 = x^2$$

$$x^2-4x-5 = 0$$

$$(x-5)(x+1) = 0$$

$$x = 5, -1$$

$$20. \frac{2(x-50)^{1/2}}{2} = \frac{-10}{2}$$

$$[(x-50)^{1/2}]^2 = [-5]^2$$

$$x-50 = -25$$

$$x = -75$$

$$21. \frac{2(x+1)^{1/2}}{2} = \frac{1}{2}$$

$$[(x+1)^{1/2}]^2 = [1/2]^2$$

$$x+1 = 1/4$$

$$x = -3/4$$

$$22. [(45-9x)^{1/2}]^2 = [x-5]^2$$

$$45-9x = x^2-10x+25$$

$$x^2-x-20 = 0$$

$$(x-5)(x+4) = 0$$

$$x = 5, -4$$