

$$\textcircled{23} \quad \sqrt{2x+5}-4=3$$

$$\quad \quad \quad \underline{+4 \quad +4}$$

$$(\sqrt{2x+5})^2 = 7^2$$

$$2x+5 = 49$$

$$\quad \underline{-5 \quad -5}$$

$$\frac{2x}{2} = \frac{44}{2}$$

$$\boxed{x=22}$$

$$\sqrt{2(22)+5}-4=3$$

$$3=3 \checkmark$$

$$\textcircled{25} \quad (\sqrt{x+6})^2 = (5-\sqrt{x+1})^2$$

$$\sqrt{x+6} = (5-\sqrt{x+1})(5-\sqrt{x+1})$$

$$x+6 = 25 - 5\sqrt{x+1} - 5\sqrt{x+1} + x+1$$

$$x+6 = 26 + x - 10\sqrt{x+1}$$

$$\quad \underline{-x \quad -26 \quad -26 \quad -x}$$

$$\frac{-20}{-10} = \frac{-10\sqrt{x+1}}{-10}$$

$$2^2 = (\sqrt{x+1})^2 \quad \sqrt{3+6} = 5 - \sqrt{3+1}$$

$$4 = x+1$$

$$\quad \underline{-1 \quad -1}$$

$$3 = 3 \checkmark$$

$$\boxed{x=3}$$

$$\textcircled{27} \quad (\sqrt{x-15})^2 = (3-\sqrt{x})^2$$

$$x-15 = (3-\sqrt{x})(3-\sqrt{x})$$

$$x-15 = 9 - 3\sqrt{x} - 3\sqrt{x} + x$$

$$x-15 = 9 + x - 6\sqrt{x}$$

$$\quad \underline{-x \quad -9 \quad -9 \quad -x}$$

$$\frac{-24}{-6} = \frac{-6\sqrt{x}}{-6}$$

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

$$x=16$$

$$\sqrt{16-15} = 3 - \sqrt{16}$$

$$1 = -1x$$

No Real Solution

$$\textcircled{29} \quad 6 + \sqrt{4x+8} = 9$$

$$\quad \underline{-6 \quad -6}$$

$$(\sqrt{4x+8})^2 = 3^2$$

$$4x+8 = 9$$

$$\quad \underline{-8 \quad -8}$$

$$\frac{4x}{4} = \frac{1}{4}$$

$$\boxed{x = \frac{1}{4}}$$

$$6 + \sqrt{4(\frac{1}{4})+8} = 9$$

$$6 + 9 = 9 \checkmark$$

$$(31) \sqrt{x-4} = \sqrt{2x-13}$$

$$\begin{array}{r} x-4 = 2x-13 \\ -2x \quad -2x \end{array}$$

$$\begin{array}{r} -x-4 = -13 \\ +4 \quad +4 \end{array}$$

$$-x = -9$$

$$\boxed{x=9}$$

$$\sqrt{9-4} = \sqrt{2(9)-13}$$

$$\sqrt{5} = \sqrt{5} \checkmark$$

$$(33) \sqrt{x-5} - \sqrt{x} = -2$$
$$\begin{array}{r} +\sqrt{x} \quad +\sqrt{x} \end{array}$$

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

$$\begin{array}{r} x-5 = 4 - 4\sqrt{x} + x \\ -x-4 \quad +4 \quad -x \end{array}$$

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

$$\left(\frac{9}{4}\right)^2 = (\sqrt{x})^2$$

$$\boxed{x = \frac{81}{16}}$$

$$\sqrt{\frac{81}{16}} - 5 = \sqrt{\frac{81}{16}} - 2$$

$$\frac{9}{4} - \frac{9}{4} = -2 \checkmark$$

$$\frac{-8}{4} = -2 \checkmark$$

$$(35) 2 = \frac{1}{4} \sqrt{65-h}$$

$$8^2 = (\sqrt{65-h})^2$$

$$64 = 65 - h$$

$$\begin{array}{r} -65 \quad -65 \end{array}$$

$$-1 = -h$$

$$\boxed{h = 1 \text{ meter}}$$

$$(37) (5p-7)^{\frac{1}{3}} + 3 = 5$$

$$\begin{array}{r} -3 \quad -3 \end{array}$$

$$((5p-7)^{\frac{1}{3}})^3 = 2^3$$

$$5p-7 = 8$$

$$\begin{array}{r} +7 \quad +7 \end{array}$$

$$5p = 15$$

$$\boxed{p = 3}$$

$$(5(3)-7)^{\frac{1}{3}} + 3 = 5$$

$$8^{\frac{1}{3}} + 3 = 5$$

$$5 = 5 \checkmark$$

$$\textcircled{39} (3x+7)^{\frac{1}{4}} - 3 = 1$$

$$\begin{array}{r} +3 \\ +3 \end{array}$$
$$(3x+7)^{\frac{1}{4}} = 4$$

$$\begin{array}{r} 3x+7 = 256 \\ -7 \quad -7 \end{array}$$

$$\frac{3x}{3} = \frac{249}{3}$$

$$\boxed{x = 83}$$

$$(3(83)+7)^{\frac{1}{4}} = 4$$

$$256^{\frac{1}{4}} = 4 \checkmark$$

$$\textcircled{41} (4z-1)^{\frac{1}{5}} - 1 = 2$$

$$\begin{array}{r} +1 \\ +1 \end{array}$$
$$((4z-1)^{\frac{1}{5}})^5 = (3)^5$$

$$4z-1 = 243$$

$$4z = 244$$

$$\boxed{z = 61}$$

$$(4(61)-1)^{\frac{1}{5}} - 1 = 2$$

$$(243)^{\frac{1}{5}} - 1 = 2$$

$$2 = 2 \checkmark$$

$$\textcircled{43} 3(x+5)^{\frac{1}{3}} - 6 = 0$$

$$\begin{array}{r} +6 \\ +6 \end{array}$$
$$\frac{3(x+5)^{\frac{1}{3}}}{3} = \frac{6}{3}$$

$$\left((x+5)^{\frac{1}{3}}\right)^3 = 2^3$$

$$x+5 = 8$$

$$\boxed{x = 3}$$

$$3(3+5)^{\frac{1}{3}} - 6 = 0$$

$$3(2) - 6 = 0$$

$$0 = 0 \checkmark$$

$$\textcircled{45} \sqrt[3]{4n-8} - 4 = 0$$

$$\begin{array}{r} +4 \\ +4 \end{array}$$
$$(\sqrt[3]{4n-8})^3 = 4^3$$

$$4n-8 = 64$$

$$4n = 72$$

$$\boxed{n = 18}$$

$$\sqrt[3]{4(18)-8} - 4 = 0$$

$$\sqrt[3]{64} - 4 = 0$$

$$4 - 4 = 0$$

$$0 = 0 \checkmark$$

$$\textcircled{47} \frac{1}{4}(32b)^{\frac{1}{3}} = 1.4$$

$$\frac{1}{4}((32b)^{\frac{1}{3}})^3 = 4^3$$

$$(8) = 32b = 64$$

$$\boxed{b=2}$$

$$\frac{1}{4}(32(2))^{\frac{1}{3}} = 1$$

$$\frac{1}{4}(64)^{\frac{1}{3}} = 1$$

$$\frac{1}{4}(4) = 1$$

$$1 = 1 \checkmark$$

$$\textcircled{49} (2x-1)^{\frac{1}{4}} - 2 = 1$$

$$((2x-1)^{\frac{1}{4}})^4 = 3^4$$

$$2x-1 = 81$$

$$2x = 82$$

$$\boxed{x=41, F}$$