

Solve.

Solution is: 38

5.  $5(x-2)^{\frac{1}{2}} + 1 = 31$

OR

$$\begin{array}{r} -1 \quad -1 \\ 5(x-2)^{1/2} = \frac{30}{5} \end{array}$$

$$(x-2)^{1/2} = 6$$

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

$$x-2=36$$

$$x=38$$

$$((x-2)^{1/2})^2 = (6)^2$$

$$(x-2)^1 = 36$$

$$x=38$$

Solve.  $5 + (2x-3)^{\frac{1}{4}} = 13$

$$\begin{array}{r} -5 \quad -5 \\ (2x-3)^{1/4} = 8 \end{array}$$

$$((2x-3)^{1/4})^4 = (8)^4$$

$$(\sqrt[4]{2x-3})^4 = (8)^4 \quad \text{OR}$$

$$(2x-3)^1 = 4096$$

$$2x-3 = 4096$$

$$2x-3 = 4096$$

$$\frac{2x}{2} = \frac{4099}{2}$$

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$$x = 2049.5$$

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Solve.

Solution is: 41

6.  $(2x-1)^{\frac{3}{4}} - 10 = 17$

$$+10 \quad +10$$

$$(2x-1)^{3/4} = 27$$

$$\begin{array}{l} (\sqrt[4]{(2x-1)^3})^4 = (27)^4 \\ \sqrt[3]{(2x-1)^3} = \sqrt[3]{531441} \end{array}$$

$$\begin{array}{l} 2x-1=81 \\ +1 \quad +1 \\ 2x=82 \\ \frac{2x}{2} = \frac{82}{2} \\ x=41 \end{array}$$

Solve:

$(x+7)^{\frac{2}{3}} + 5 = 14$

$$\begin{array}{r} -5 \quad -5 \\ ((x+7)^{2/3})^{3/2} = (9)^{3/2} \end{array}$$

$$x+7 = 27$$

$$x=20$$

Solve.

Solution is: -2, 3

$$7. \left( \sqrt[3]{x^2 - 7} \right)^3 = \left( \sqrt[3]{x - 1} \right)^3$$

$$x^2 - 7 = x - 1$$

$$x^2 - x - 6 = 0 \quad x = 3, -2$$
$$(x - 3)(x + 2) = 0$$

Solve.

Solution is: 5

$$8. \left( (4x - 1)^{\frac{1}{2}} \right)^2 = \left( (2x + 9)^{\frac{1}{2}} \right)^2$$

$$4x - 1 = 2x + 9$$

$$2x = 10$$

$$x = 5$$

Solve.

Solution is: 3

$$9. (x + 13)^{\frac{1}{4}} - (x + 1)^{\frac{1}{2}} = 0$$

$$\left[ (x + 13)^{\frac{1}{4}} \right]^4 = \left[ (x + 1)^{\frac{1}{2}} \right]^4$$

$$x + 13 = (x + 1)^2$$
$$x + 13 = x^2 + 2x + 1$$
$$0 = x^2 + x - 12$$
$$x = (x + 4)(x - 3)$$
$$x = 3, -4$$

$$\begin{array}{r} \sqrt{2} \\ 4 \overline{) 8} \\ \underline{8} \\ 0 \end{array}$$