Find all real roots in each problem.

1. Find all real square roots of 324 ± 18

2. Find all real fifth roots of -16,807 -7

3. Find all real fourth roots of -81 NO Real Roots

Find all real solutions of each equation

a) $3x^4 + 1 = 1876$

$-1 \quad -1$

$\frac{3x^4}{3} = \frac{1875}{3}$

$\sqrt[4]{x^4} = \sqrt[4]{625}$

$x = \pm 5$

b) $\frac{x^9}{8} + 5 = -32763$

$-5 \quad -5$

$8 \cdot \frac{x^9}{8} = -32768 \cdot 8$

$\sqrt[9]{x^9} = \sqrt[9]{-262144}$

$x = -4$

c) $\frac{x^6 + 735}{3} = 2$

$x^6 + 735 = 6$

$x^6 = -729$

$\sqrt[6]{x^6} = \sqrt[6]{-729}$

NO Real Sol

Find all real solutions to this equation.

$$6 + 2\sqrt{3x - 5} = 38$$

$-6 \qquad -6$

$$\frac{2\sqrt{3x-5}}{2} = \frac{32}{2}$$

$$\left(\sqrt{3x-5}\right)^2 = (16)^2$$

$$3x - 5 = 256$$

$+5 \qquad +5$

$$\frac{3x}{3} = \frac{261}{3}$$

$$\boxed{x = 87}$$

Sec 7-5: Solving Square Root and Other Radical Equations.

A radical equation is an equation that has a variable in the radicand or a variable with a fractional exponent.

Steps to solve a radical equation:

1. Isolate the radical on one side of the equation
2. Raise both sides of the equation to the same power as the index on the radical.
3. Finish solving for x.
4. Check for extraneous solutions.

Solve:

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

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

$$x + 4 = 16$$

$$\boxed{x = 12}$$