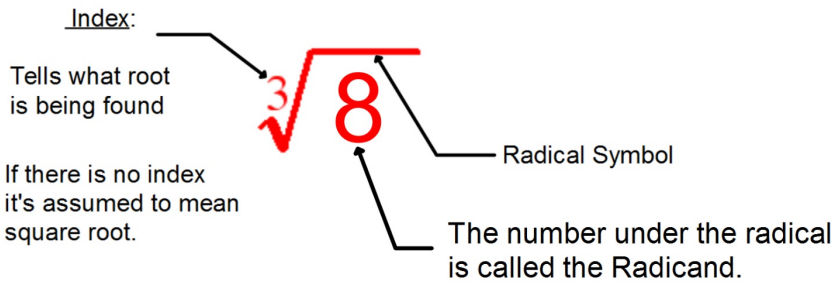
What is each problem asking for?

1. $-\sqrt{25}$ The negative Square Root of 25.

2. $\pm\sqrt{25}$ Both the positive and negative Square Root of 25.

3. $\sqrt{25}$ The positive Square Root of 25. Also known as the Principal Square Root.



Solving Quadratic equations using Square Roots:

- Isolate the term that is being square on one side of the equation
- Sqare root both sides of the equation
- Finish solving for x, if necessary.

The area of a circle is found using the following formula:

$$A = \pi r^2$$

The area of the circle is $480 in^2$. Find the radius to the nearest hundredth of an inch.

$$\sqrt{\frac{480}{\pi}} = \sqrt{r^2}$$

$$= r$$

12.360777446

12.36 in

Number	# of Real Square Roots
Pos	Two → ±
Zero	One → zero itself
Neg	None

Find all real solutions.

$13x^2 + 1 = 118$

$-1 \quad -1$

$\frac{13x^2}{13} = \frac{117}{13}$

$\sqrt{x^2} = \sqrt{9}$

$x = \pm 3$

Find the solutions to this equation.

$75 + 3x^2 = 27$

$-75 \quad -75$

$\frac{+3x^2}{3} = \frac{-48}{3}$

$\sqrt{x^2} = \sqrt{-16}$

NO Real Solution

When the book says to find solutions it means find all REAL solutions.

When they write no solution it means NO REAL solution.

Find all real solutions to each equation using square roots. Simplify irrational answers.

$108 - 5x^2 = 8$

$-108 \quad -108$

$\frac{-5x^2}{-5} = \frac{-100}{-5}$

$\sqrt{x^2} = \sqrt{20}$

$\sqrt{5 \cdot 4}$

$x = \pm 2\sqrt{5}$

Given the equation: $x^2 + b = 23$

$-b \quad -b$

a. For what values of b will there be 2 real solutions?

$b < 23 \qquad \sqrt{23-b} = \sqrt{POS}$

b. For what values of b will there be only 1 real solution?

$b = 23 \qquad \sqrt{23-b} = \sqrt{0}$

c. For what values of b will there be only no real solution?

$b > 23 \qquad \sqrt{23-b} = \sqrt{NEG}$

Find the EXACT solutions to this equation:

$2x^2 - 21 = 87$

$+21 \quad +21$

$\frac{2x^2}{2} = \frac{108}{2}$

$\sqrt{x^2} = \sqrt{54} = \sqrt{6 \cdot 9}$

$x = \pm 3\sqrt{6}$

Find the EXACT solutions to this equation:

$16x^2 - 20 = 61$

$+20 \quad +20$

$\frac{16x^2}{16} = \frac{81}{16}$

$\sqrt{x^2} = \sqrt{\frac{81}{16}}$

$x = \pm \frac{9}{4}$

Find the EXACT solutions to this equation:

$18x^2 + 13 = 111$

$-13 \quad -13$

$\frac{18x^2}{18} = \frac{98}{18}$

$x^2 = \frac{98 \div 2}{18 \div 2}$

$\sqrt{x^2} = \sqrt{\frac{49}{9}}$

$\pm \frac{7}{3}$

Find the EXACT solutions to this equation:

$$\frac{2}{3}x^2 - 9 = 7$$

$+9 \quad +9$

$\frac{3}{2} \cdot \frac{2}{3}x^2 = 16 \cdot \frac{3}{2}$

$\sqrt{x^2} = \sqrt{24}$

$x = \pm 2\sqrt{6}$

You can now finish Hwk #28

Sec 10-4

Pages 531-532 Due Tomorrow

Problems 12-16, 20, 21, 23-25, 33-37