

16 The square root of $625 = 25$

20 The square root of $121 = 11$

24 The square root of $1/9 = 1/3$

28 ± 30

32 -10

36 17

40 -25

44 no

48 yes

52 no

56 -11.14

60 3.16

64 ± 12

9.2 Solving Equations w/ Square Roots

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Recall What is the Goal
when we are Solving Equations?
Get the Variable By Itself!
How? We do the Inverse
(opposite)

ex 1) $\sqrt{x^2} = \pm \sqrt{4}$

$$x = \pm 2$$

What about -2?
Yrs... (-2) would work.

SO... $x = 2$ or $x = -2$
 $\Rightarrow \underline{\underline{x = \pm 2}}$

When we are solving equations w/ SquareRoot ...

we must Include the \pm Symb.

Yesterday

$$\sqrt{25} = \underline{\underline{5}}$$

today

$$\sqrt{x^2} = \pm \sqrt{25}$$
$$x = \underline{\underline{\pm 5}}$$

$$\text{ex2) } \sqrt{x^2} = \pm \sqrt{144}$$

$$x = \pm 12$$

$$\text{ex3) } \sqrt{x^2} = \pm \sqrt{10}$$

$$x = \pm \sqrt{10}$$

ex4)

$$\sqrt{y^2} = \pm \sqrt{5}$$

$$y = \pm \sqrt{5}$$

ex 5) $3x^2 - 48 = 0$
 $+48 +48$

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

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

$$x = \pm 4$$

Recall

$$3x - 48 = 0$$
$$+48 +48$$

$$\frac{3x}{3} = \frac{48}{3}$$

$$x = 16$$

ex 6) $2x^2 - 72 = 0$

$$+72 +72$$

$$\frac{2x^2}{2} = \frac{72}{2}$$

$$\sqrt{x^2} = \pm \sqrt{36}$$

$$\underline{\underline{x = \pm 6}}$$

ex 7) $2y^2 + 13 = 41$
 $\quad\quad\quad -13 \quad -13$

$$\frac{2y^2}{2} = \frac{28}{2}$$

$$\sqrt{y^2} = \pm \sqrt{14}$$

$$\underline{\underline{y = \pm \sqrt{14}}}$$

ex 8) $\sqrt{a^2} = \pm \sqrt{0}$

$a = 0$

ex 9) $\sqrt{y^2} = \pm \sqrt{-81}$

No Solution

ex 10)

$$\begin{array}{r} 7x^2 + 30 = 9 \\ -30 \quad -30 \\ \hline 7x^2 = -21 \end{array}$$

$$\sqrt{x^2} = \sqrt{-3}$$

No Solution

O.T.L.

Pg 508: 18-42 evens

Pg 509: 50-55 all

Pg 515: 48, 52, 56, 60, 64, 68, 72