

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?
yes (-2) works!

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

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

$$x = \underline{\underline{\pm 5}}$$

ex2) $\sqrt{x^2} = \pm\sqrt{144}$
 $x = \pm 12$

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

ex4) $\sqrt{y^2} = \pm\sqrt{5}$
 $y = \pm\sqrt{5}$

ex 5/

$$3x^2 - 48 = 0$$

$$\frac{\quad + 48 + 48}{\quad}$$

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

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

$$\underline{\underline{x = \pm 4}}$$

Recall

$$3x - 48 = 0$$

$$\frac{\quad + 48 + 48}{\quad}$$

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

$$\underline{\underline{x = 16}}$$

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

$$+72 \quad +72$$

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

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

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

ex) $2y^2 + 13 = 41$

$-13 \quad -13$

$2y^2 = 28$

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

$y = \pm \sqrt{14}$

ex 8) $\sqrt{a^2} = \pm 10$

$a = 0$

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

No Solution

ex 10)

$$7x^2 + 30 = 9$$

$$\underline{-30 \quad -30}$$

$$7x^2 = -21$$

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

No Solution

O.T.L.

Pg 508: 18-42 evens

Pg 509: 50-55 all

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