

transformations

# Square Root Method

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Practice: Solving Quadratic Equations

Directions: Solve each of the problems below for x. In the second column, list BOTH possible answers!

Problem/Work	Answers
$x^2 = 9$ $x = 3$ $\sqrt{x^2} = \sqrt{9}$ $x = \pm 3$	$x = \underline{3}$ or $\underline{-3}$
$x^2 = 4$ $x = \pm 2$ $\sqrt{x^2} = \sqrt{4}$ $x = 2$ $x = -2$	$x = \underline{2}$ or $\underline{-2}$
$(x+2)^2 = 9$ $\sqrt{(x+2)^2} = \sqrt{9}$ $(x+2) = \pm 3$ $x+2 = 3$ $x = 1$ $x+2 = -3$ $x = -5$	$x = \underline{1}$ or $\underline{-5}$
$2x^2 - 12 = 20$ $+12 +12$ $\frac{2x^2}{2} = \frac{32}{2}$ $x^2 = 16$ $\sqrt{x^2} = \sqrt{16}$ $x = \pm 4$	$x = \underline{4}$ or $\underline{-4}$
$(x+13)^2 - 25 = 0$ $+25 +25$ $\sqrt{(x+13)^2} = \sqrt{25}$ $x+13 = \pm 5$ $x+13 = 5$ $x = -8$ $x+13 = -5$ $x = -18$	$x = \underline{-8}$ or $\underline{-18}$

$x = -18$

Problem/Work	Answers
$-11 = 16 - 3x^2$ $-27 = -3x^2$ $\sqrt{9} = \sqrt{x^2}$ $x = \pm 3$	$x = \underline{3}$ or $\underline{-3}$
$7. (2x-5)^2 = 9$ $\sqrt{(2x-5)^2} = \sqrt{9}$ $2x-5 = \pm 3$ $2x-5 = 3$ $2x = 8$ $x = 4$ $2x-5 = -3$ $2x = 2$ $x = 1$	$x = \underline{4}$ or $\underline{1}$
$8. -(x+1)^2 + 7 = -9$ $-(x+1)^2 = -16$ $\sqrt{(x+1)^2} = \sqrt{16}$ $x+1 = \pm 4$ $x+1 = 4$ $x+1 = -4$	$x = \underline{3}$ or $\underline{-5}$
$9. -2(x+1)^2 + 8 = 0$ $-2(x+1)^2 = -8$ $\sqrt{(x+1)^2} = \sqrt{4}$ $x+1 = 2$ $x+1 = -2$	$x = \underline{1}$ or $\underline{-3}$
$10. -(5x-45)^2 + 100 = 0$ $(5x-45)^2 = 100$ $\sqrt{(5x-45)^2} = \sqrt{100}$ $5x-45 = \pm 10$ $5x-45 = 10$ $5x-45 = -10$	$x = \underline{11}$ or $\underline{7}$

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