

Algebraic Equations_radicals

432. $\sqrt{x^2} = \sqrt{49}$

$x = 7$

433. $x^2 = 135$

$x = 11.62$

434. $(\sqrt{n})^2 = (11)^2$

$n = 121$

451. $x = \sqrt{3x+4}$

$x^2 = 3x+4$

$x^2 - 3x - 4 = 0$

$(x-4)(x+1)$

435. $2\sqrt{a} = 24$

$\sqrt{a} = 12$

$a = 144$

438. $\sqrt{3x+4} + 8 = 12$

$\sqrt{3x+4} = 4$

$3x+4 = 16$

$3x = 12$

$x = 4$

449. $\frac{28}{\sqrt{5x+1}} = 7$

$\frac{28}{7} = \sqrt{5x+1}$

$4 = \sqrt{5x+1}$

$16 = 5x$

$3 = x$

436. $\sqrt{2x} - 4 = 4$

$\sqrt{2x} = 8$

$2x = 64$

$x = 32$

440. $\sqrt{4x+9} = -13$

$4x+9 = 169$

$4x = 160$

$x = 40$

454. $\sqrt{4x+3} = 2x$

$4x+3 = 4x^2$

$4x^2 - 4x - 3 = 0$

437. $\sqrt{4x+6} = 8$

$4x+6 = 64$

$4x = 58$

$x = 14.5$

444. $3\sqrt{-x} + 7 = 25$

$3\sqrt{-x} = 18$

$\sqrt{-x} = 6$

$-x = 36$

$x = -36$

449.

445. $3 = \cancel{10} - \sqrt{100x-1} \rightarrow 10$

$\frac{3-10}{-1} = \frac{0 - \sqrt{100x-1}}{-1}$

$\frac{-7}{-1} = \sqrt{100x-1}$

$7 = \sqrt{100x-1}$

$49 = 100x-1$

$50 = 100x$

$0.5 = x$

448.

$$3\sqrt{13x+43} - 4 = 29$$

$$\frac{3\sqrt{13x+43}}{3} = \frac{29+4}{3}$$

$$(\sqrt{13x+43})^2 = \frac{33}{3}(11)^2$$

$$13x+43 = 121$$

$$\frac{13x}{13} = \frac{121-43}{13}$$

$$x = 6$$

449.

~~$$\frac{28}{\sqrt{5x+1}} = \frac{7}{1}$$~~

~~$$\sqrt{5x+1} \cdot \frac{28}{7\sqrt{5x+1}} = \frac{7}{7} (\sqrt{5x+1})$$~~

$$\frac{121}{-43} = \frac{78}{78}$$

$$\frac{28}{7} = \frac{\sqrt{5x+1}}{1}$$

$$4 = \sqrt{5x+1}$$

$$16 = 5x+1$$

$$15 = 5x$$

$$3 = x$$

$4x^2 - 4x - 3$

-12

$-6 \quad 2$

factors of -12
When added together
give coeff.
of x

$(4x+2)(4x-6)$

reduce
or factor
out 2
(not always 2)

$(2x+1)(2x-3)$

$4x^2 - 6x + 2x - 3$

check
it
works

$(2x+1) = 0 \quad x = -\frac{1}{2}$

$(2x-3) = 0 \quad x = 1.5$