

7.12

Solving an Equation with Radicals: Problem Type 3

• Example 1

Solve for t .

$$\sqrt{2t - 1} = t$$

We begin by squaring both sides.

$$\sqrt{2t - 1} = t$$

$$2t - 1 = t^2$$

$$0 = t^2 - 2t + 1$$

Writing the right hand side as a perfect square we have

$$0 = (t - 1)^2$$

which gives the solution $t = 1$.

We then need verify that this value for t satisfies the original equation.

$$\sqrt{2t - 1} = \sqrt{1} = 1.$$

The solution checks.

• • • CHECK YOURSELF 1

Solve for x

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

• • • CHECK YOURSELF ANSWER

1. $x = 1, x = 2$.

7.12 Exercises

Name _____

Section _____

Date _____

A N S W E R S

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10. _____

11. _____

12. _____

Solve for the variable in each of the following.

1. $s = \sqrt{2s + 3}$

2. $w = \sqrt{5w - 4}$

3. $x = \sqrt{11x - 30}$

4. $z = \sqrt{3z + 10}$

5. $t = \sqrt{2t + 8}$

6. $y = \sqrt{11y - 18}$

7. $s = \sqrt{-4s + 21}$

8. $r = \sqrt{4r + 5}$

9. $z = \sqrt{11z - 24}$

10. $x = \sqrt{-9x - 20}$

11. $y = \sqrt{2y + 24}$

12. $w = \sqrt{14w - 49}$