Unit 3 Lesson 9: Solving Radical Equations

1 Math Talk: Radical Equations (Warm up)

Student Task Statement

Solve these equations mentally:

$$\sqrt[3]{x} = 1$$

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

$$\sqrt{100} = 2x$$

$$\sqrt{x+1} = \text{-}5$$

2 Getting to the Root of the Problem (Optional)

Student Task Statement

Find the solution(s) to each of these equations, or explain why there is no solution.

1. $\sqrt{a-5} = 5$

2. $\sqrt[3]{a-5} = 5$

3. $\sqrt[3]{b} = \text{-}2$

4. $\sqrt{c} + 2 = 0$

5. $\sqrt[3]{3-d} + 4 = 0$

6. $\sqrt{7} = \sqrt{x-1}$

7. $\sqrt{36} = 3y$

8. $22z = \sqrt[3]{11}$

3 Write Your Own Equation (Optional)

Student Task Statement

1. Write an equation that includes a radical symbol with:
    a. one solution

    b. no solutions

    c. two solutions

2. Switch with a partner and solve their equations.