

Radical Addition, Subtraction, and Equations

Date _____ Period _____

Part 1: Simplify.

1) $-\sqrt{2} - \sqrt{2}$

2) $-3\sqrt{3} + 2\sqrt{3}$

3) $-2\sqrt{3} - 2\sqrt{3} - \sqrt{3}$

4) $-2\sqrt{6} - \sqrt{6} + 3\sqrt{6}$

Part 2: Simplify.

5) $\sqrt{24} + \sqrt{6}$

6) $\sqrt{24} + \sqrt{24}$

7) $2\sqrt{18} - \sqrt{2}$

8) $-\sqrt{20} + 3\sqrt{45}$

Part 3: Simplify.

9) $2\sqrt{8} - \sqrt{27} - \sqrt{3}$

10) $-2\sqrt{12} - 3\sqrt{3} + 3\sqrt{6}$

11) $-\sqrt{5} - 2\sqrt{54} - \sqrt{5}$

12) $3\sqrt{8} + 2\sqrt{2} + 2\sqrt{24}$

Part 4: Solve each equation. Remember to check for extraneous solutions.

13) $6 = \sqrt{x}$

14) $-6 = -8 + \sqrt{x}$

15) $-6 + \sqrt{x-1} = -5$

16) $5\sqrt{v} = 15$

Part 5: Solve each equation. Remember to check for extraneous solutions.

17) $15 = \sqrt{r-4} + 7$

18) $11 = 10 + \sqrt{\frac{v}{3}}$

19) $2 = \sqrt{3n-8} + 1$

20) $3 = -7 + \sqrt{12-11a}$

Part 6: Solve each equation. Remember to check for extraneous solutions.

21) $\sqrt{22-r} = \sqrt{r-4}$

22) $\sqrt{2x-3} = \sqrt{15-x}$

23) $\sqrt{n+9} = \sqrt{3n+23}$

24) $\sqrt{2n-63} = \sqrt{\frac{n}{5}}$

Answers to Radical Addition, Subtraction, and Equations

1) $-2\sqrt{2}$

9) $4\sqrt{2} - 4\sqrt{3}$

17) $\{68\}$

3) $-5\sqrt{3}$

11) $-2\sqrt{5} - 6\sqrt{6}$

19) $\{3\}$

5) $3\sqrt{6}$

13) $\{36\}$

21) $\{13\}$

7) $5\sqrt{2}$

15) $\{2\}$

23) $\{-7\}$