



In this worksheet, you will learn to master the process of simplifying radical expressions and managing irrational numbers. Work through each question carefully and show all your steps.

## Easy Questions

1. Simplify  $\sqrt{50}$ .
2. Simplify  $\sqrt{18}$ .
3. Simplify  $\sqrt{72}$ .
4. Simplify  $\sqrt{32}$ .
5. Simplify  $\sqrt{75}$ .

## Intermediate Questions

6. Simplify  $\sqrt{12x^2}$ , assuming  $x \geq 0$ .
7. Simplify  $\sqrt{45a^2b}$ , with  $a, b > 0$ .
8. Simplify  $\sqrt{72m^4}$ , assuming  $m \geq 0$ .
9. Simplify  $\sqrt{98p^2q}$ , with  $p, q > 0$ .
10. Simplify  $\sqrt{200}$ .
11. Simplify  $\sqrt{8x}$ , given  $x \geq 0$ .
12. Simplify  $\sqrt{18y^3}$ , with  $y \geq 0$ .
13. Simplify  $\sqrt{50a^3b^2}$ , with  $a, b \geq 0$ .
14. Simplify  $\sqrt{32c^5}$ , assuming  $c \geq 0$ .
15. Simplify  $\sqrt{98x^3y}$ , with  $x, y \geq 0$ .
16. Simplify  $\sqrt{75m^3n^2}$ , with  $m, n \geq 0$ .
17. Simplify  $\sqrt{150a^4b}$ , assuming  $a, b \geq 0$ .
18. Simplify  $\sqrt{98x^2y^3}$ , with  $x, y \geq 0$ .
19. Simplify  $\sqrt{200a^5}$ , assuming  $a \geq 0$ .
20. Simplify  $\sqrt{288b^3}$ , with  $b \geq 0$ .

## Hard Questions

21. Simplify  $\sqrt{392a^3b^5}$ , with  $a, b > 0$ .
22. Simplify  $\sqrt{800x^3y^7}$ , assuming  $x, y > 0$ .
23. Simplify  $\sqrt{500a^2b^4c^3}$ , with  $a, b, c > 0$ .
24. Simplify  $\sqrt{2450x^5}$ , with  $x > 0$ .
25. Simplify  $\sqrt{882m^2n^3p^5}$ , with  $m, n, p > 0$ .
26. Simplify  $\sqrt{1152x^7}$ , assuming  $x > 0$ .
27. Simplify  $\sqrt{32a^3b^2c^4}$ , with  $a, b, c \geq 0$ .
28. Simplify  $\sqrt{288x^3y^2z}$ , assuming  $x, y, z > 0$ .
29. Simplify  $\sqrt{648a^2b^8}$ , with  $a, b > 0$ .
30. Simplify  $\sqrt{392x^4y^6z^2}$ , assuming  $x, y, z > 0$ .