

Radical Review Worksheet

Simplify.

1. $\sqrt{121}$ 2. $-\sqrt{49}$ 3. $\sqrt{\frac{25}{36}}$ 4. $\sqrt{0.0064}$ 5. $\sqrt{1}$ 6. $\sqrt{(-15)^2}$ 7. $\sqrt{(2x)^2}$ 8. $\sqrt{16w^4}$

9. $\sqrt{(y-3)^2}$ 10. $\sqrt{4x^2 - 20x + 25}$ 11. $\sqrt[3]{1}$ 12. $\sqrt[3]{-64}$ 13. $\sqrt[3]{27m^3}$ 14. $\sqrt[3]{-8h^6}$

15. $\sqrt[5]{-243}$ 16. $\sqrt[4]{256}$ 17. $-\sqrt[4]{256}$ 18. $\sqrt[4]{-256}$

Multiply and simplify.

19. $\sqrt{19} \cdot \sqrt{5}$ 20. $\sqrt[3]{4} \cdot \sqrt[3]{6}$ 21. $\sqrt{5x^4} \cdot \sqrt{4x^2}$

Simplify.

22. $\sqrt{18}$ 23. $\sqrt[3]{160}$ 24. $\sqrt{300}$ 25. $\sqrt[3]{40}$ 26. $\sqrt{12a^5b^8}$

Divide and simplify.

27. $\frac{\sqrt{36}}{\sqrt{x^2}}$ 28. $\frac{\sqrt{300}}{\sqrt{3}}$ 29. $\frac{5\sqrt[3]{3}}{\sqrt[3]{81}}$ 30. $\frac{\sqrt[5]{64x^2y^6}}{\sqrt[5]{2x^7y}}$

Add or subtract. Simplify.

31. $3\sqrt{5} + 4\sqrt{5}$ 32. $6\sqrt{2} - 3\sqrt{2}$ 33. $4\sqrt{8} + 3\sqrt{2}$ 34. $5\sqrt[3]{2} - 6\sqrt[3]{3} + 4\sqrt[3]{2}$ 35. $\sqrt{25x-50} - \sqrt{4x-8}$

Multiply. Simplify.

36. $\sqrt{3}(5\sqrt{4} + 2\sqrt{7})$ 37. $\sqrt[3]{8}(2\sqrt[3]{2} - 4\sqrt[3]{3})$ 38. $(\sqrt{x} - 3)(2\sqrt{x} + 4)$ 39. $(7 - 2\sqrt{x})(7 + 2\sqrt{x})$

40. $(3\sqrt{y} - 4)^2$

Write without rational exponents.

41. $3^{1/2}$ 42. $x^{3/5}$ 43. $(2y)^{2/3}$ 44. $27^{1/3}$

Write with rational exponents.

45. $\sqrt{a^3x^2y}$ 46. $\sqrt[3]{16a^2b^5}$ 47. $(\sqrt[3]{5ab^2c})^4$

Use the properties of exponents to simplify.

48. $5^{1/3} \cdot 5^{4/3}$ 49. $\frac{2^{1/6}}{2^{5/6}}$

Use rational exponents to simplify.

50. $\sqrt[6]{a^3}$ 51. $\sqrt[8]{4}$ 52. $\sqrt[2]{27}$ 53. $\sqrt[3]{64x^6y^{12}}$

Write as a single radical expression.

54. $\sqrt[4]{5} \cdot \sqrt{2}$ 55. $\sqrt[3]{2x} \cdot \sqrt[4]{4x^2}$ 56. $\frac{\sqrt{(2x+y)^7}}{\sqrt[3]{2x+y}}$ 57. $a^{1/2}b^{2/3}c^{-1/5}$ 58. $\frac{x^{3/5}y^{1/4}}{x^{-2/5}y^{4/3}}$ 59. $\frac{(4w^3h^{2/5})^2}{-3w^{1/2}h^2}$

Write as a single radical expression.

60. $(\sqrt[4]{3} \cdot \sqrt{2} + 2\sqrt[4]{192})^2$