

Section 5 – 0: Rational Exponents

Name _____

Simplify.

1. $x^{4/3} \cdot x^{2/3}$

2. $x^{1/12} \cdot x^{7/12}$

3. $y^{2/3} \cdot y^{1/2}$

4. $x^{11/3} \cdot x^{-2/3}$

5. $x^{-1/2} \cdot x^{7/4}$

6. $y^{3/4} \cdot y^{-1/2}$

7. $(x^6)^{2/3}$

8. $x^{-1/6} \cdot x^{2/3}$

9. $(y^{-8})^{1/4}$

10. $(x^{-6})^{2/3}$

11. $(x^{12})^{-3/4}$

12. $(x^{-2/3})^{-6}$

13. $\frac{x^{2/3}}{x^{8/3}}$

14. $\frac{y^{5/4}}{y^{1/4}}$

15. $\frac{x^5}{x^{1/2}}$

16. $\frac{x^{5/2}}{x^{-1/2}}$

17. $(16)^{1/2}$

18. $(81)^{1/2}$

19. $\left(\frac{49}{25}\right)^{1/2}$

20. $\left(\frac{121}{144}\right)^{1/2}$

21. $(27)^{1/3}$

22. $(125)^{1/3}$

23. $\left(\frac{8}{27}\right)^{1/3}$

24. $\left(\frac{125}{-64}\right)^{1/3}$

25. $\left(\frac{64}{27}\right)^{1/3}$

26. $(81)^{1/4}$

27. $9^{3/2}$

28. $8^{2/3}$

29. $4^{5/2}$

30. $\left(\frac{4}{9}\right)^{3/2}$

31. $\left(\frac{8}{27}\right)^{2/3}$

32. $\left(\frac{16}{25}\right)^{3/2}$

33. $\left(\frac{64}{27}\right)^{2/3}$

34. $(27)^{-1/3}$

35. $(81)^{-1/2}$

36. $(32)^{-1/5}$

37. $\left(\frac{1}{9}\right)^{-1/2}$

38. $\left(\frac{49}{81}\right)^{-1/2}$

39. $\left(\frac{4}{25}\right)^{-1/2}$

40. $\left(\frac{27}{64}\right)^{-1/3}$

41. $25^{-3/2}$

42. $27^{-2/3}$

43. $16^{-3/2}$

44. $8^{-2/3}$

45. $\left(\frac{8}{125}\right)^{-2/3}$

46. $\left(\frac{9}{4}\right)^{-3/2}$

47. $\left(\frac{8}{27}\right)^{-2/3}$

48. $\left(\frac{25}{16}\right)^{-3/2}$

49. $\left(\frac{27}{64}\right)^{-2/3}$

50. $\left(\frac{36}{25}\right)^{-3/2}$

51. $\left(\frac{25}{9}\right)^{-3/2}$

52. $\left(\frac{125}{27}\right)^{-2/3}$