

1. $\frac{9^{-2}}{1}$

$\frac{1}{9^2}$

$\frac{1}{81}$

2. $8^{2/3}$
 $\sqrt[3]{8^2}$

2^2

4

3. $32^{2/5}$
 $\sqrt[5]{32^2}$

2^2

4

4. $\frac{27^{-1/3}}{1}$

$\frac{1}{27^{1/3}}$

$\frac{1}{\sqrt[3]{27}}$

$\frac{1}{3}$

5. $\left(\frac{1}{2}\right)^{-2}$

$\left(\frac{2}{1}\right)^2$

$\frac{4}{1}$

6. $\frac{(-32)^{-3/5}}{1}$

$\frac{1}{(-32)^{3/5}}$

$\frac{1}{\sqrt[5]{(-32)^3}}$

$\frac{1}{(-2)^3}$

$\frac{1}{-8}$

4. $27^{-1/3}$

$$\frac{1}{27^{1/3}}$$

$$\frac{1}{\sqrt[3]{27}}$$

$$\frac{1}{3}$$

7. $16^{1/2}$

$$\sqrt{16}$$

$$4$$

5. $\left(\frac{1}{2}\right)^{-2}$

$$\left(\frac{2}{1}\right)^2$$

$$\frac{4}{1}$$

8. $\left(\frac{4}{81}\right)^{3/2}$

$$\sqrt{\frac{4}{81}}^3$$

$$\left(\frac{2}{9}\right)^3 = \frac{8}{729}$$

6. $\frac{(-32)^{-3/5}}{1}$

$$\frac{1}{(-32)^{3/5}}$$

$$\frac{1}{\sqrt[5]{(-32)^3}}$$

$$\frac{1}{(-2)^3}$$

$$\frac{1}{-8}$$

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

$$10. \left(\frac{4}{9}\right)^{-2}$$
$$\left(\frac{9}{4}\right)^2$$
$$\frac{81}{16}$$

$$11. (-8)^{2/3}$$
$$\sqrt[3]{(-8)^2}$$
$$(-2)^2$$
$$4$$

$$12. \left(\frac{1}{64}\right)^{-2/3}$$

$$\left(\frac{64}{1}\right)^{2/3}$$

$$\sqrt[3]{64}^2$$

$$4^2$$

$$16$$

$$13. 5^0$$
$$1$$

$$14. 16^{-3/4}$$
$$\frac{1}{16}$$

$$\left(\frac{1}{16}\right)^{3/4}$$

$$\frac{1}{\sqrt[4]{16}^3}$$

$$\frac{1}{2^3}$$

$$\frac{1}{8}$$

$$11^{-2}$$

$$16^{-2}$$

4

16

 $\frac{1}{2^3}$ $\frac{1}{8}$

15. $\frac{4^{-2}}{1}$

$\frac{1}{4^2}$

$\frac{1}{16}$

16. $\frac{1^{-2}}{1}$

$\frac{1}{1^2}$

$\frac{1}{1}$

17. $-\left(\frac{1}{8}\right)^{-1}$

$-\left(\frac{8}{1}\right)^1$

$-1(8)$
 $= -8$

18. $\left(-\left(\frac{1}{8}\right)\right)^{-1}$ Brackets first

$\left(-\frac{1}{8}\right)^{-1}$

$\left(-\frac{8}{1}\right)^1 = -8$

19. $\left(-\left(\frac{1}{8}\right)\right)^{-2}$

$\left(-\frac{1}{8}\right)^{-2}$

$\left(-\frac{8}{1}\right)^2$

$+64$
 $\frac{64}{1}$

$= 64$

20. $\left(\frac{9}{16}\right)^{1/2}$

$\sqrt{\frac{9}{16}}$

$\frac{3}{4}$

$$21. \left(\frac{8}{27}\right)^{-2/3}$$

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

$$\sqrt[3]{\frac{27}{8}}^2$$

$$\left(\frac{3}{2}\right)^2 = \frac{9}{4}$$

$$22. \frac{4}{1}^{-5/2}$$

$$\frac{1}{4^{5/2}}$$

$$\frac{1}{\sqrt{4}^5}$$

$$\frac{1}{2^5} = \frac{1}{32}$$

23. $144^{1/2}$

$$\sqrt{144}$$

$$12$$

24. $27^{1/3}$

$$\sqrt[3]{27}$$

$$3$$

25. $\frac{8^{-2}}{1}$

$$\frac{1}{8^2}$$

$$\frac{1}{64}$$

26. $\frac{4^{-3/2}}{1}$

$$\frac{1}{4^{3/2}}$$

$$\frac{1}{\sqrt{4}^3}$$

$$\frac{1}{2^3} = \frac{1}{8}$$

27. $25^{3/2}$

$$\sqrt{25^3}$$

$$5^3$$

$$125$$

28. $64^{1/2}$

$$\sqrt{64}$$

$$2$$

$$29. \quad \frac{100}{1}^{-1/2}$$

$$\frac{1}{100^{1/2}}$$

$$\frac{1}{\sqrt{100}}$$

$$\frac{1}{10}$$

$$30. \quad 64^{1/3}$$

$$\sqrt[3]{64}$$

$$4$$

$$31. \quad 16^{1/4}$$

$$\sqrt[4]{16}$$

$$2$$

$$32. \quad 8^{2/3}$$

$$\sqrt[3]{8^2}$$

$$2^2$$

$$4$$

$$31. 16^{\frac{1}{4}}$$
$$\sqrt[4]{16}$$
$$2$$

$$32. 8^{\frac{2}{3}}$$
$$\sqrt[3]{8^2}$$
$$2^2$$
$$4$$

$$33. \frac{4}{1}^{-\frac{1}{2}}$$
$$\frac{1}{4^{\frac{1}{2}}}$$
$$\frac{1}{\sqrt{4}}$$
$$\frac{1}{2}$$

$$34. 64^{\frac{2}{3}}$$
$$\sqrt[3]{64^2}$$
$$4^2$$
$$16$$

$$35. \left(\frac{1}{9}\right)^{-3/2}$$

$$\left(\frac{9}{1}\right)^{3/2}$$

$$\sqrt[2]{\frac{9}{1}}^3$$

$$3^3$$

$$27$$

$$36. 4^{1/2} + 9^{-1/2}$$

$$\sqrt{4} + \frac{1}{9^{1/2}}$$

$$2 + \frac{1}{\sqrt{9}}$$

$$\frac{2}{1} + \frac{1}{3}$$

$$\frac{6}{3} + \frac{1}{3}$$

$$\frac{7}{3}$$

$$-1/2$$

37. $\left(\frac{1}{2}\right)^3$

$$\frac{1}{8}$$

38. $\frac{(-8)^{-1/3}}{1}$

$$\frac{1}{(-8)^{1/3}}$$

$$\frac{1}{\sqrt[3]{-8}}$$

$$\frac{1}{(-2)}$$

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

$$\sqrt{\frac{4}{9}}^3$$

$$\left(\frac{2}{3}\right)^3$$

$$\frac{8}{27}$$

40. $\left(\frac{2}{3}\right)^{-2}$

$\left(\frac{3}{2}\right)^2$

$\frac{9}{4}$

41. $\left(\frac{1}{4}\right)^{1/2}$

$\sqrt{\frac{1}{4}}$

$\frac{1}{2}$

42. $\frac{27^{-1/3}}{1}$

$\frac{1}{27^{1/3}}$

$\frac{1}{\sqrt[3]{27}}$

$\frac{1}{3}$

43. $\frac{(-9)^{-1}}{1}$

$\frac{1}{(-9)}$

44. $64^{3/2}$

$\sqrt[2]{64}^3$

8^3

$= 512$

45. $32^{1/5}$

$\sqrt[5]{32}$

2

$$46. \frac{(-8)^{-3}}{1}$$

$$\frac{1}{(-8)^3}$$

$$= -\frac{1}{512}$$

$$47. 3^{-1} 5^{-2}$$

$$\frac{1}{3} \cdot \frac{1}{5^2}$$

$$\frac{1}{3} \cdot \frac{1}{25}$$

$$\frac{1}{75}$$

$$48. 64^{\frac{1}{3}}$$

$$\sqrt[3]{64}$$

$$4$$

$$\begin{array}{l} 49. \quad \frac{125}{1}^{-2/3} \\ \frac{1}{125}^{2/3} \\ \frac{1}{\sqrt[3]{125}}^2 \\ \frac{1}{5^2} \\ \frac{1}{25} \end{array}$$
$$\begin{array}{l} 50. \quad \frac{36}{1}^{-3/2} \\ \frac{1}{36}^{3/2} \\ \frac{1}{\sqrt{36}}^3 \\ \frac{1}{6^3} \\ = \frac{1}{216} \end{array}$$
$$\begin{array}{l} 51. \quad \frac{32}{1}^{-2/5} \\ \frac{1}{32}^{2/5} \\ \frac{1}{\sqrt[5]{32}}^2 \\ \frac{1}{2^2} \\ \frac{1}{4} \end{array}$$
$$\begin{array}{l} 52. \quad \frac{64}{1}^{-1/2} \\ 53. \quad 4^{1/2} \cdot 8^{1/3} \\ \pm \end{array}$$
$$54. \quad \left(\frac{2}{5}\right)^0$$

$$52. \frac{64^{-1/2}}{1}$$

$$\frac{1}{64^{1/2}}$$

$$\frac{1}{\sqrt{64}}$$

$$\frac{1}{8}$$

$$53. 4^{1/2} \cdot 8^{1/3}$$

$$\frac{4}{2}$$

$$\frac{1}{\sqrt{4}} \cdot \frac{1}{\sqrt[3]{8}}$$

$$\frac{1}{2} \cdot \frac{1}{2}$$

$$\frac{1}{4}$$

$$54. \left(\frac{2}{5}\right)^0$$

$$= 1$$