EduSahara™ Assignment

Name : Laws of Exponents for Real Numbers

Chapter : Number Systems

Grade : CBSE Grade IX

1. $(3 \times 2)^{7} =$

(i) $3^{7} \times 2^{6}$ (ii) $3^{7} \times 2^{8}$ (iii) $3^{7} \times 5^{7}$ (iv) $3^{7} \times 2^{5}$ (v) $3^{7} \times 2^{7}$

2. $(5 \times -4 \times 5)^{4/3} =$

(i) $\left(\frac{4}{3}\right)_{5} \times_{(-1)} \left(\frac{4}{3}\right) \times_{7} \left(\frac{4}{3}\right)$ (ii) $\left(\frac{4}{3}\right)_{5} \times_{(-4)} \left(\frac{4}{3}\right) \times_{5} \left(\frac{4}{3}\right)$ (iii) $\left(\frac{4}{3}\right)_{5} \times_{(-4)} \left(\frac{4}{5}\right) \times_{5} \left(\frac{4}{5}\right)$ (iv) $\left(\frac{4}{3}\right)_{5} \times_{(-7)} \left(\frac{4}{3}\right) \times_{3} \left(\frac{4}{3}\right)$

(v) $\left(\frac{4}{3}\right)_{5} \times (-4)^{4} \times 5^{4}$

3. $\left(\left(\frac{-3}{7}\right) \times \left(\frac{-2}{5}\right)\right)^{7} =$

(i) $\left(\frac{-3}{7}\right)^{7} \times \left(\frac{-2}{5}\right)^{7}$ (ii) $\left(\frac{-3}{7}\right)^{7} \times \left(\frac{-2}{5}\right)^{8}$ (iii) $\left(\frac{-3}{7}\right)^{7} \times \left(\frac{-4}{5}\right)^{7}$ (iv) $\left(\frac{-3}{7}\right)^{7} \times \left(\frac{-2}{5}\right)^{6}$ (v) $\left(\frac{-3}{7}\right)^{7} \times \left(\frac{-2}{5}\right)^{9}$

4. $\left(\left(\frac{-7}{5}\right) \times \frac{5}{2} \times \frac{-4}{1}\right)^{-2/5} =$

(i) $\left(\frac{-7}{5}\right)^{(-2/5)} \times \left(\frac{3}{2}\right)^{(-2/5)} \times_{(-7)} \left(\frac{-2}{5}\right)$ (ii) $\left(\frac{-7}{5}\right)^{(-2/5)} \times \left(\frac{5}{2}\right)^{(-2/3)} \times_{(-4)} \left(\frac{-2}{3}\right)$ (iii) $\left(\frac{-7}{5}\right)^{(-2/5)} \times \left(\frac{5}{2}\right)^{(-2/7)} \times_{(-4)} \left(\frac{-2}{7}\right)$

(iv) $\left(\frac{-7}{5}\right)^{(-2/5)} \times \left(\frac{7}{2}\right)^{(-2/5)} \times_{(-2)} \left(\frac{-2}{5}\right)$ (v) $\left(\frac{-7}{5}\right)^{(-2/5)} \times \left(\frac{5}{2}\right)^{(-2/5)} \times_{(-4)} \left(\frac{-2}{5}\right)$

5. $\left(\frac{8}{3}\right)^{3} =$

(i) $\frac{8^{4}}{3^{3}}$ (ii) $\frac{8^{2}}{3^{3}}$ (iii) $\frac{8^{3}}{0}$ (iv) $\frac{8^{3}}{3^{3}}$ (v) $\frac{8^{3}}{5^{3}}$

6. $\left(\frac{-7}{2}\right)^{-8}$ =

(i) $\frac{(-7)^{-9}}{2^{-8}}$ (ii) $\frac{(-7)^{-8}}{(-1)^{-8}}$ (iii) $\frac{(-7)^{-7}}{2^{-8}}$ (iv) $\frac{(-7)^{-8}}{2^{-8}}$ (v) $\frac{(-7)^{-8}}{4^{-8}}$

7. $\left[\left(\frac{-5}{3}\right)_{(-2)}\right]^{-2}$ =

(i) $\left(\frac{10}{3}\right)_{(-2)}$ (ii) $\left(\frac{16}{5}\right)_{(-2)}$ (iii) 1 (iv) $\left(\frac{10}{3}\right)_{(-4)}$ (v) $(-2)^4$

8. $\left[\left(\frac{-5}{3}\right)_{3}\right]^{3}$ =

(i) 6^{-5} (ii) 3^{-6} (iii) 3^{-4} (iv) 3^{-5} (v) 1

9. $[(-6)^{-4}]^{-5}$ =

(i) $(-6)^{20}$ (ii) $(-6)^{21}$ (iii) $(-6)^{19}$ (iv) $(-8)^{20}$ (v) $(-4)^{20}$

10. $\left[\left(\frac{-5}{9}\right)^{-2}\right]^{-4}$ =

(i) $\left(\frac{-1}{3}\right)^{8}$ (ii) $\left(\frac{-5}{9}\right)^{9}$ (iii) $\left(\frac{-5}{9}\right)^{7}$ (iv) $\left(\frac{-7}{9}\right)^{8}$ (v) $\left(\frac{-5}{9}\right)^{8}$

11. $\left[\left(\frac{-3}{5}\right)_{2}\right]^{4/3}$ =

(i) $\left(\frac{-4}{5}\right)_{(-1)}$ (ii) $\left(\frac{-4}{7}\right)_{2}$ (iii) $\left(\frac{-4}{5}\right)_{5}$ (iv) $\left(\frac{-4}{3}\right)_{2}$ (v) $\left(\frac{-4}{5}\right)_{2}$

12. $\sqrt[21]{3} \times \sqrt[21]{2}$ =

(i) $\sqrt[21]{6}$ (ii) $\sqrt[23]{6}$ (iii) $\sqrt[21]{3}$ (iv) $\sqrt[19]{6}$ (v) $\sqrt[21]{8}$

13. $\frac{\sqrt[8]{10}}{\sqrt[8]{6}} =$

(i) $\sqrt[8]{\frac{5}{3}}$ (ii) 1 (iii) $\sqrt[8]{\frac{7}{3}}$ (iv) $\sqrt[10]{\frac{5}{3}}$ (v) $\sqrt[6]{\frac{5}{3}}$

14. $\frac{\sqrt{4}}{\sqrt{7}} =$

(i) $\sqrt[4]{\frac{4}{7}}$ (ii) $\sqrt{\frac{6}{7}}$ (iii) $\sqrt{\frac{2}{7}}$ (iv) $\sqrt{\frac{4}{7}}$ (v) $\frac{4}{7}$

15. $\frac{\sqrt[3]{11}}{\sqrt[3]{3}} =$

(i) $\frac{11}{3}$ (ii) $\sqrt[3]{\frac{11}{3}}$ (iii) $\sqrt[3]{3}$ (iv) $\sqrt[3]{\frac{13}{3}}$ (v) $\sqrt[5]{\frac{11}{3}}$

16. $\frac{7\sqrt[3]{20}}{3\sqrt[3]{17}} =$

(i) $\frac{6860}{459}$ (ii) $\sqrt[5]{\frac{6860}{459}}$ (iii) $\sqrt[3]{\frac{6862}{459}}$ (iv) $\sqrt[3]{\frac{6860}{459}}$ (v) $\sqrt[3]{\frac{254}{17}}$

17. $\sqrt[3]{10^{19}} =$

(i) $12^{\left(\frac{19}{3}\right)}$ (ii) $7^{\left(\frac{19}{3}\right)}$ (iii) $10^{\left(\frac{19}{3}\right)}$ (iv) $10^{\left(\frac{3}{19}\right)}$ (v) 10^{19}

18. $\sqrt{3} =$

(i) $\left(\frac{1}{3}\right)^{(1/2)}$ (ii) 3^2 (iii) $3^{\left(\frac{1}{2}\right)}$ (iv) $5^{\left(\frac{1}{2}\right)}$ (v) 1

19. $7^{\left(\frac{1}{4}\right)} =$

(i) $\sqrt[4]{4}$ (ii) $\sqrt[4]{7}$ (iii) $\sqrt[4]{10}$ (iv) $\sqrt[1]{4^7}$ (v) $\sqrt{7}$

20. 6^{8} =

(i) $\left(\frac{-1}{6}\right)^{-8}$ (ii) $\left(\frac{1}{2}\right)^{-8}$ (iii) $\left(\frac{1}{6}\right)^{-8}$ (iv) $\left(\frac{1}{6}\right)^{-7}$ (v) $\left(\frac{1}{6}\right)^{-9}$

21. $(-2)^{-5}$ =

(i) $\left(\frac{1}{2}\right)^{5}$ (ii) $\left(\frac{-3}{2}\right)^{5}$ (iii) $\left(\frac{-1}{2}\right)^{6}$ (iv) $\left(\frac{-1}{2}\right)^{4}$ (v) $\left(\frac{-1}{2}\right)^{5}$

22. 6^{-4} =

(i) $\left(\frac{1}{6}\right)^{4}$ (ii) $\left(\frac{1}{6}\right)^{3}$ (iii) $\left(\frac{1}{2}\right)^{4}$ (iv) $\left(\frac{1}{6}\right)^{5}$ (v) $\left(\frac{-1}{6}\right)^{4}$

23. $\left(\frac{9}{7}\right)^{(-8/5)}$ =

(i) $\left(\frac{7}{9}\right)^{(8/5)}$ (ii) $\left(\frac{7}{9}\right)^{2}$ (iii) $\left(\frac{5}{9}\right)^{(8/5)}$ (iv) $\left(\frac{7}{9}\right)^{(10/7)}$ (v) 1

24. $\frac{6^{9}}{6^{-3}}$ =

(i) 6^{11} (ii) 3^{12} (iii) 6^{13} (iv) 8^{12} (v) 6^{12}

25. $\frac{\left(\frac{-3}{2}\right)^{3}}{\left(\frac{-3}{2}\right)^{-4}}$ =

(i) $\left(\frac{-3}{2}\right)^{8}$ (ii) $\left(\frac{-5}{2}\right)^{7}$ (iii) $\left(\frac{-3}{2}\right)^{6}$ (iv) $\left(\frac{-3}{2}\right)^{7}$ (v) $\left(\frac{-1}{2}\right)^{7}$

$\left(\frac{-5}{4}\right)^{3}$

26. $\frac{\quad}{\left(\frac{5}{3}\right)^{3}} =$

(i) $\left(\frac{-37}{12}\right)^{3}$ (ii) $\left(\frac{-31}{10}\right)^{3}$ (iii) $\left(\frac{-35}{12}\right)^{3}$ (iv) $\left(\frac{-39}{14}\right)^{3}$ (v) $\left(\frac{-35}{12}\right)^{6}$

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

27. $\frac{\quad}{(5/2)} =$

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

(i) $\left(\frac{-9}{4}\right)^{-3}$ (ii) $\left(\frac{-11}{4}\right)^{-4}$ (iii) $\left(\frac{-9}{4}\right)^{-4}$ (iv) $\left(\frac{-7}{4}\right)^{-4}$ (v) $\left(\frac{-9}{4}\right)^{-5}$

28. $[6^{5}]^{-4} =$

(i) 6^{-20} (ii) 6^{-19} (iii) 6^{-21} (iv) 8^{-20} (v) 3^{-20}

29. $[(-9)^{3}]^{-5/3} =$

(i) $(-12)^{-5}$ (ii) $(-9)^{-4}$ (iii) $(-9)^{-5}$ (iv) $(-6)^{-5}$ (v) $(-9)^{-6}$

30. $\left[\left(\frac{7}{4}\right)^{-3}\right]^{-5/2} =$

(i) $\left(\frac{7}{4}\right)^{(29/4)}$ (ii) $\left(\frac{7}{4}\right)^{(15/2)}$ (iii) $\left(\frac{5}{4}\right)^{(15/2)}$ (iv) $\left(\frac{9}{4}\right)^{(15/2)}$ (v) $\left(\frac{7}{4}\right)^{8}$

31. Simplify the expression $\left(\frac{-2}{3}\right)^{-5} \times \left(\frac{-2}{3}\right)^{-9}$

(i) $\left(\frac{-2}{3}\right)^{-15}$ (ii) $\left(\frac{-2}{3}\right)^{-14}$ (iii) $\left(\frac{-2}{3}\right)^{-12}$ (iv) $\left(\frac{-2}{3}\right)^{-13}$ (v) $\left(\frac{-4}{3}\right)^{-14}$

32. Simplify the expression $\left(\frac{5}{3}\right)^{(3/2)} \times \left(\frac{5}{3}\right)^{(6/5)} \times \left(\frac{5}{3}\right)^{(7/4)}$

(i) $\left(\frac{5}{3}\right)^{(89/20)}$ (ii) $\left(\frac{5}{3}\right)^{(9/2)}$ (iii) $\left(\frac{7}{3}\right)^{(89/20)}$ (iv) $\left(\frac{5}{3}\right)^{(97/22)}$ (v) 1

33. Simplify the expression $\left(\frac{-9}{2}\right)^{(-4)} \times \left(\frac{-9}{2}\right)^{(-3)} \times \left(\frac{-9}{2}\right)^{(-7)}$

(i) $\left(\frac{-9}{2}\right)^{(-81)}$ (ii) $\left(\frac{-9}{2}\right)^{(-84)}$ (iii) $\left(\frac{-9}{2}\right)^{(-86)}$ (iv) $\left(\frac{-9}{4}\right)^{(-84)}$ (v) $(-84)^{-9}$

34. Simplify the expression $\left(\frac{8}{7}\right)^{(7/5)} \times \left(\frac{7}{3}\right)^{(7/5)}$

(i) $2\frac{2}{3}$ (ii) $\left(\frac{7}{5}\right)^{2}$ (iii) $\left(\frac{8}{3}\right)^{(7/5)}$ (iv) $\left(\frac{10}{3}\right)^{(7/5)}$ (v) $\left(\frac{8}{3}\right)^{(7/3)}$

35. Simplify $\frac{4^2}{4^2}$

(i) 4 (ii) 2 (iii) 1 (iv) -2 (v) 0

36. Simplify $\frac{4^{-2} \times (-5)^2}{4^2 \times 3^2}$

(i) $\left(\frac{5}{48}\right)^{3}$ (ii) $\left(\frac{7}{48}\right)^{2}$ (iii) $\left(\frac{5}{48}\right)^{2}$ (iv) $\frac{5}{48}$ (v) $\left(\frac{1}{16}\right)^{2}$

37. Simplify $\frac{(-4)^2 \times (-2)^2 \times (-2)^2}{(-3)^{-2} \times 2^2 \times (-4)^{-2}}$

(i) 96 (ii) 96^2 (iii) 96^3 (iv) 99^2 (v) 94^2

38. Simplify $\frac{3^2 \times 5^{-2}}{(-5)^2 \times (-4)^2}$

(i) $\left(\frac{3}{100}\right)^2$ (ii) $\left(\frac{1}{20}\right)^2$ (iii) $\left(\frac{1}{100}\right)^2$ (iv) $\frac{3}{100}$ (v) $\left(\frac{3}{100}\right)^3$

39. The value of $\left(\frac{5}{3}\right)^{-2} \times \left(\frac{-5}{2}\right)^{-2}$

(i) $\frac{36}{623}$ (ii) $\frac{36}{625}$ (iii) $\frac{38}{625}$ (iv) $\frac{34}{625}$ (v) $\left(\frac{36}{625}\right)^2$

40. The value of $(-2)^2 \div (-4)^3$

(i) $\left(\frac{-1}{14}\right)$ (ii) $\left(\frac{-1}{16}\right)$ (iii) $\left(\frac{-1}{16}\right)^2$ (iv) $\frac{1}{16}$ (v) $\left(\frac{-3}{16}\right)$

41. The value of $(-2)^{-2} \div 3^{-3}$

(i) $\frac{25}{4}$ (ii) $\frac{27}{2}$ (iii) $\left(\frac{27}{4}\right)^2$ (iv) $\frac{29}{4}$ (v) $\frac{27}{4}$

42. The value of $\left(\frac{-1}{3}\right)^2 \div \left(\frac{2}{3}\right)^2$

(i) 1 (ii) 5^{-1} (iii) 4^{-2} (iv) 6^{-1} (v) 4^{-1}

43. The value of $\left(\frac{-3}{2}\right)^{-2} \div \left(\frac{-1}{2}\right)^{-2}$

(i) 9^{-1} (ii) 6^{-1} (iii) 12^{-1} (iv) 9^{-2} (v) 10^{-1}

44. Find the value of $(-125)^{\left(\frac{5}{3}\right)}$

(i) -3124 (ii) -3126 (iii) -3122 (iv) -3127 (v) -3125

(3/2)

45. Find the value of $\left(\frac{16}{9}\right)$

(i) $\frac{22}{9}$ (ii) $\frac{64}{27}$ (iii) $\frac{64}{25}$ (iv) $\frac{64}{29}$ (v) $\frac{62}{27}$

46. Find the value of 2^{-3}

(i) $(\frac{-1}{8})$ (ii) $\frac{3}{8}$ (iii) $\frac{1}{8}$ (iv) $\frac{1}{6}$ (v) $\frac{1}{10}$

(-5/3)

47. Find the value of $\left(\frac{-27}{64}\right)$

(i) $(\frac{-1024}{241})$ (ii) $(\frac{-1024}{245})$ (iii) $(\frac{-1024}{243})$ (iv) $(\frac{-1022}{243})$ (v) $(\frac{-38}{9})$

Assignment Key

1) (v)	2) (ii)	3) (i)	4) (v)	5) (iv)	6) (iv)
7) (i)	8) (iv)	9) (i)	10) (v)	11) (v)	12) (i)
13) (i)	14) (iv)	15) (ii)	16) (iv)	17) (iii)	18) (iii)
19) (ii)	20) (iii)	21) (v)	22) (i)	23) (i)	24) (v)
25) (iv)	26) (iii)	27) (iii)	28) (i)	29) (iii)	30) (ii)
31) (ii)	32) (i)	33) (ii)	34) (iii)	35) (iii)	36) (iii)
37) (ii)	38) (i)	39) (ii)	40) (ii)	41) (v)	42) (v)
43) (i)	44) (v)	45) (ii)	46) (iii)	47) (iii)	