EduSahara™ Assignment

Name : Laws of Exponents for Real Numbers

Chapter : Number Systems

Grade : CBSE Grade IX

1. $(-4 \times 5)^{-7/3} =$

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

2. $(-7 \times -7 \times -5)^{4/3} =$

(i) $\left(\frac{4}{3}\right)_{(-7)} \times \left(\frac{4}{5}\right)_{(-7)} \times \left(\frac{4}{5}\right)_{(-5)}$ (ii) $\left(\frac{4}{3}\right)_{(-7)} \times \left(\frac{4}{3}\right)_{(-7)} \times \left(\frac{4}{3}\right)_{(-5)}$ (iii) $\left(\frac{4}{3}\right)_{(-7)} \times \left(\frac{4}{3}\right)_{(-9)} \times \left(\frac{4}{3}\right)_{(-8)}$

(iv) $\left(\frac{4}{3}\right)_{(-7)} \times (-7)^4 \times (-5)^4$ (v) $\left(\frac{4}{3}\right)_{(-7)} \times \left(\frac{4}{3}\right)_{(-5)} \times \left(\frac{4}{3}\right)_{(-2)}$

3. $\left(\left(\frac{-8}{5}\right) \times \frac{8}{3}\right)^9 =$

(i) $\left(\frac{-8}{5}\right)^9 \times \left(\frac{10}{3}\right)^9$ (ii) $\left(\frac{-8}{5}\right)^9 \times \left(\frac{8}{3}\right)^9$ (iii) $\left(\frac{-8}{5}\right)^9 \times 2^9$ (iv) $\left(\frac{-8}{5}\right)^9 \times \left(\frac{8}{3}\right)^{10}$ (v) $\left(\frac{-8}{5}\right)^9 \times \left(\frac{8}{3}\right)^8$

4. $\left(\frac{-2}{1} \times \frac{8}{7} \times \frac{-7}{1}\right)^{-7/6} =$

(i) $\left(\frac{-7}{6}\right)_{(-2)} \times \left(\frac{10}{7}\right)^{(-7/6)} \times \left(\frac{-7}{6}\right)_{(-5)}$ (ii) $\left(\frac{-7}{6}\right)_{(-2)} \times \left(\frac{8}{7}\right)^{(-7/4)} \times \left(\frac{-7}{4}\right)_{(-7)}$ (iii) $\left(\frac{-7}{6}\right)_{(-2)} \times \left(\frac{6}{7}\right)^{(-7/6)} \times \left(\frac{-7}{6}\right)_{(-10)}$

(iv) $\left(\frac{-7}{6}\right)_{(-2)} \times \left(\frac{8}{7}\right)^{(-7/6)} \times \left(\frac{-7}{6}\right)_{(-7)}$ (v) $\left(\frac{-7}{6}\right)_{(-2)} \times \left(\frac{8}{7}\right)^{(-7/8)} \times \left(\frac{-7}{8}\right)_{(-7)}$

5. $\left(\frac{9}{5}\right)^5 =$

(i) $\frac{9^4}{5^5}$ (ii) $\frac{9^5}{8^5}$ (iii) $\frac{9^5}{2^5}$ (iv) $\frac{9^5}{5^5}$ (v) $\frac{9^6}{5^5}$

6. $\left(\frac{-5}{7}\right)^{-6}$ =

(i) $\frac{(-5)^{-6}}{5^{-6}}$ (ii) $\frac{(-5)^{-5}}{7^{-6}}$ (iii) $\frac{(-5)^{-6}}{10^{-6}}$ (iv) $\frac{(-5)^{-6}}{7^{-6}}$ (v) $\frac{(-5)^{-7}}{7^{-6}}$

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

(i) $(-5)^{-6}$ (ii) $(-2)^{-5}$ (iii) $(-7)^{-5}$ (iv) $(-5)^{-5}$ (v) $(-5)^{-4}$

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

(i) $\left(\frac{-20}{9}\right)_{7}$ (ii) $\left(\frac{-20}{9}\right)_{5}$ (iii) $\left(\frac{-16}{7}\right)_{7}$ (iv) $\left(\frac{-24}{11}\right)_{7}$ (v) $\left(\frac{-20}{9}\right)_{9}$

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

(i) $\left(\frac{5}{2}\right)^{-9}$ (ii) $\left(\frac{1}{2}\right)^{-9}$ (iii) $\left(\frac{3}{2}\right)^{-8}$ (iv) $\left(\frac{3}{2}\right)^{-9}$ (v) $\left(\frac{3}{2}\right)^{-10}$

10. $\left[\left(\frac{9}{8}\right)^{(-3/4)}\right]^{2}$ =

(i) $\left(\frac{7}{8}\right)^{(-3/2)}$ (ii) $\left(\frac{9}{8}\right)^{-2}$ (iii) $\left(\frac{11}{8}\right)^{(-3/2)}$ (iv) $\left(\frac{9}{8}\right)^{(-3/2)}$ (v) $\left(\frac{9}{8}\right)^{(-5/4)}$

11. $\left[\left(\frac{-3}{2}\right)_{6}\right]^{-2/3}$ =

(i) 5 (ii) $\frac{6}{1}$ (iii) 6^2 (iv) 4 (v) 9

12. $\sqrt[5]{2} \times \sqrt[5]{10} =$

(i) $\sqrt[5]{20}$ (ii) $\sqrt[5]{18}$ (iii) $\sqrt[7]{20}$ (iv) $\sqrt[5]{22}$ (v) $\sqrt[3]{20}$

13. $\dfrac{\sqrt[7]{7}}{\sqrt[7]{7}} =$

(i) 0 (ii) 2 (iii) (-1) (iv) 1 (v) 3

14. $\dfrac{7\sqrt{9}}{3\sqrt{7}} =$

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

15. $\dfrac{\sqrt[6]{6}}{\sqrt[6]{4}} =$

(i) $\sqrt[6]{\frac{5}{2}}$ (ii) $\sqrt[8]{\frac{3}{2}}$ (iii) $\sqrt[6]{\frac{3}{2}}$ (iv) $\sqrt[4]{\frac{3}{2}}$ (v) $\sqrt[6]{\frac{1}{2}}$

16. $\dfrac{3\sqrt[3]{2}}{2\sqrt[3]{19}} =$

(i) $\sqrt[3]{\frac{27}{76}}$ (ii) $\frac{27}{76}$ (iii) $\sqrt[3]{\frac{25}{76}}$ (iv) $\sqrt[3]{\frac{29}{76}}$ (v) $\sqrt[5]{\frac{27}{76}}$

17. $\sqrt{12^{11}} =$

(i) $10^{\left(\frac{11}{2}\right)}$ (ii) $15^{\left(\frac{11}{2}\right)}$ (iii) 12^{11} (iv) $12^{\left(\frac{11}{2}\right)}$ (v) $12^{\left(\frac{2}{11}\right)}$

18. $\sqrt[13]{3} =$

(i) $5^{\left(\frac{1}{13}\right)}$ (ii) 1 (iii) $3^{\left(\frac{1}{11}\right)}$ (iv) 3^{13} (v) $3^{\left(\frac{1}{13}\right)}$

19. $22^{(\frac{1}{9})}$ =

(i) $\sqrt[1]{9^{22}}$ (ii) $\sqrt[7]{22}$ (iii) $\sqrt[9]{22}$ (iv) $\sqrt[9]{20}$ (v) $\sqrt[9]{25}$

20. $(-4)^{8}$ =

(i) $(\frac{-1}{4})^{-7}$ (ii) $(\frac{-1}{4})^{-8}$ (iii) $(\frac{-3}{4})^{-8}$ (iv) $(\frac{-1}{4})^{-9}$ (v) $(\frac{1}{4})^{-8}$

21. $(-4)^{-6}$ =

(i) $(\frac{-1}{4})^{5}$ (ii) $(\frac{-1}{4})^{7}$ (iii) $(\frac{1}{4})^{6}$ (iv) $(\frac{-3}{4})^{6}$ (v) $(\frac{-1}{4})^{6}$

22. $(\frac{-3}{2})^{4}$ =

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

23. $(\frac{9}{5})^{(-6/7)}$ =

(i) $(\frac{1}{3})^{(6/7)}$ (ii) $(\frac{5}{9})^{(2/3)}$ (iii) $(\frac{5}{9})^{(6/7)}$ (iv) $(\frac{5}{9})^{(6/5)}$ (v) $(\frac{7}{9})^{(6/7)}$

24. $\frac{7^{-9}}{7^{-8}}$ =

(i) 8^{-1} (ii) 7^{-1} (iii) 5^{-1} (iv) 7^{-2} (v) 9^{-1}

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

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

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

(i) 1 (ii) (iii) $\frac{3}{2}$ (iv) (v)

$$\left(\frac{5}{4}\right)^{2}$$

26. $\frac{\quad}{2^{-4}} =$

(i) $\left(\frac{19}{4}\right)^{2}$ (ii) $\left(\frac{21}{4}\right)^{2}$ (iii) $\left(\frac{11}{2}\right)^{2}$ (iv) $\left(\frac{21}{4}\right)^{5}$ (v) $\left(\frac{31}{6}\right)^{2}$

$$\left(\frac{9}{8}\right)^{4}$$

27. $\frac{\quad}{\left(\frac{9}{8}\right)^{4}} =$

$$\left(\frac{9}{8}\right)^{-3} \quad \left(\frac{9}{8}\right)^{-1} \quad \left(\frac{9}{8}\right)^{3}$$

(i) $\frac{9}{8}$ (ii) (iii) 1 (iv) (v)

28. $[(-9)^{-3}]^{-2} =$

(i) $(-9)^{6}$ (ii) $(-9)^{5}$ (iii) $(-7)^{6}$ (iv) $(-9)^{7}$ (v) $(-12)^{6}$

29. $[7^{-2}]^{-5} =$

(i) 7^{9} (ii) 10^{10} (iii) 7^{11} (iv) 7^{10} (v) 5^{10}

30. $\left[\left(\frac{-7}{9}\right)^{-5}\right]^{5/2}$ =

(i) $\left(\frac{-7}{9}\right)^{(-49/4)}$ (ii) $\left(\frac{-7}{9}\right)^{(-25/2)}$ (iii) $(-1)^{\left(\frac{-25}{2}\right)}$ (iv) $\left(\frac{-7}{9}\right)^{-13}$ (v) $\left(\frac{-5}{9}\right)^{(-25/2)}$

31. Simplify the expression $\left(\frac{-9}{4}\right)^{-5} \times \left(\frac{-9}{4}\right)^{-4} \times \left(\frac{-9}{4}\right)^{-6}$

(i) $\left(\frac{-11}{4}\right)^{-15}$ (ii) $\left(\frac{-9}{4}\right)^{-16}$ (iii) $\left(\frac{-9}{4}\right)^{-14}$ (iv) $\left(\frac{-7}{4}\right)^{-15}$ (v) $\left(\frac{-9}{4}\right)^{-15}$

32. Simplify the expression $\left(\frac{9}{7}\right)_4^{\left(\frac{7}{4}\right)} \times 4$

(i) $\left(\frac{85}{28}\right)_7$ (ii) $\left(\frac{79}{26}\right)_4$ (iii) $\left(\frac{85}{28}\right)_2$ (iv) $\left(\frac{91}{30}\right)_4$ (v) $\left(\frac{85}{28}\right)_4$

33. Simplify the expression $\left(\frac{-6}{7}\right)_{(-7)}^{\left(\frac{-6}{7}\right)} \times_{(-2)}^{\left(\frac{-6}{7}\right)} \times_{(-7)}$

(i) $\left(\frac{-2}{3}\right)_{(-98)}$ (ii) $\left(\frac{-6}{5}\right)_{(-98)}$ (iii) $\left(\frac{-6}{7}\right)_{(-101)}$ (iv) $\left(\frac{-6}{7}\right)_{(-98)}$ (v) $\left(\frac{-6}{7}\right)_{(-96)}$

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

(i) $\left(\frac{175}{48}\right)^{(7/4)}$ (ii) $\left(\frac{173}{48}\right)^{(7/4)}$ (iii) $\left(\frac{59}{16}\right)^{(7/4)}$ (iv) $\left(\frac{175}{48}\right)^{(7/2)}$ (v) $\left(\frac{175}{48}\right)^{(7/6)}$

35. Simplify $\frac{(-2)^2}{(-5)^2}$

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

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

(i) 2^7 (ii) 5^6 (iii) 2^6 (iv) 2^4 (v) 2^5

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

(i) $\left(\frac{45}{4}\right)^2$ (ii) $\left(\frac{47}{4}\right)^2$ (iii) $\frac{45}{4}$ (iv) $\left(\frac{43}{4}\right)^2$ (v) $\left(\frac{45}{4}\right)^3$

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

(i) 3^2 (ii) 5^3 (iii) 7^2 (iv) 5 (v) 5^2

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

(i) $\left(\frac{-32}{243}\right)$ (ii) $\left(\frac{-10}{81}\right)$ (iii) $\left(\frac{-34}{243}\right)$ (iv) $\left(\frac{-32}{241}\right)$ (v) $\left(\frac{-32}{243}\right)^2$

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

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

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

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

42. The value of $\left(\frac{5}{3}\right)^{3} \div \left(\frac{-1}{3}\right)^{3}$

(i) -126 (ii) -127 (iii) -125 (iv) $(-125)^2$ (v) -123

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

(i) $\frac{200}{243}$ (ii) $\frac{202}{243}$ (iii) $\left(\frac{200}{243}\right)^{2}$ (iv) $\frac{200}{241}$ (v) $\frac{22}{27}$

44. Find the value of $(-4)^4$

(i) 255 (ii) 257 (iii) 256 (iv) 259 (v) 254

45. Find the value of $\left(\frac{9}{4}\right)^{(3/2)}$

(i) $\frac{29}{8}$ (ii) $\frac{27}{10}$ (iii) $\frac{9}{2}$ (iv) $\frac{25}{8}$ (v) $\frac{27}{8}$

46. Find the value of $16^{\left(\frac{-3}{4}\right)}$

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

47. Find the value of $(-3)^{-4}$

(i) $\frac{1}{79}$ (ii) $\frac{1}{27}$ (iii) $\frac{1}{81}$ (iv) $\left(\frac{-1}{81}\right)$ (v) $\frac{1}{83}$

Assignment Key

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