EduSahara™ Assignment

Name : Evaluating Expressions Involving Indices

Chapter : Indices

Grade : ICSE Grade IX

1. Expand the following base power 5^{4}

   (i) 16 (ii) 125 (iii) 2401 (iv) 3125 (v) 625

2. Expand the following base power 4^{-2}

   (i) $\frac{1}{16}$ (ii) $\frac{1}{64}$ (iii) $\frac{1}{4}$ (iv) $\frac{1}{49}$ (v) 1

3. Expand the following base power $(-4)^{2}$

   (i) 36 (ii) -4 (iii) -64 (iv) 4 (v) 16

4. Expand the following base power $(-2)^{-4}$

   (i) $(\frac{-1}{2})$ (ii) $\frac{1}{16}$ (iii) $(\frac{-1}{8})$ (iv) $\frac{1}{256}$ (v) $(\frac{-1}{32})$

5. Expand the following base power $\left(\frac{1}{4}\right)^{5}$

   (i) $\frac{1}{256}$ (ii) $(\frac{-1}{1024})$ (iii) $\frac{1}{1024}$ (iv) $\frac{1}{4096}$ (v) $\frac{243}{1024}$

6. Expand the following base power $\left(\frac{1}{2}\right)^{-5}$

   (i) $\frac{32}{243}$ (ii) 16 (iii) -32 (iv) 64 (v) 32

7. Expand the following base power $\left(\frac{-4}{3}\right)^{3}$

   (i) $\frac{16}{9}$ (ii) -8 (iii) $\frac{256}{81}$ (iv) $(\frac{-64}{27})$ (v) $(\frac{-8}{27})$

8. Expand the following base power $\left(\frac{-1}{4}\right)^{-5}$

   (i) $(\frac{-1024}{243})$ (ii) -1024 (iii) 256 (iv) 4096 (v) 1024

9. The value of $3^2 + (-3)^3$

(i) -18 (ii) -21 (iii) $(-18)^2$ (iv) -19 (v) -16

10. The value of $(-3)^{-3} + 3^{-3}$

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

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

(i) $\left(\frac{-211}{72}\right)$ (ii) $\left(\frac{-71}{24}\right)$ (iii) $\left(\frac{-209}{72}\right)$ (iv) $\left(\frac{-211}{72}\right)^2$ (v) $\left(\frac{-211}{70}\right)$

12. The value of $\left(\frac{1}{3}\right)^{-2} + \left(\frac{-5}{2}\right)^{-2}$

(i) $\frac{227}{25}$ (ii) $\frac{229}{23}$ (iii) $\left(\frac{229}{25}\right)^2$ (iv) $\frac{231}{25}$ (v) $\frac{229}{25}$

13. The value of $2^3 - (-2)^2$

(i) 4^2 (ii) 3 (iii) 4 (iv) 2 (v) 7

14. The value of $3^{-2} - (-2)^{-2}$

(i) $\left(\frac{-1}{12}\right)$ (ii) $\left(\frac{-5}{36}\right)^2$ (iii) $\left(\frac{-5}{36}\right)$ (iv) $\left(\frac{-7}{36}\right)$ (v) $\left(\frac{-5}{34}\right)$

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

(i) $\frac{115}{27}$ (ii) $\frac{113}{27}$ (iii) $\left(\frac{113}{27}\right)^2$ (iv) $\frac{37}{9}$ (v) $\frac{113}{25}$

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

(i) 22 (ii) 26 (iii) 23^2 (iv) 20 (v) 23

17. The value of $(-2)^2 \times 5^2$

(i) 100 (ii) 100^2 (iii) 99 (iv) 98 (v) 103

18. The value of $(-5)^{-2} \times (-5)^{-2}$

(i) 626^{-1} (ii) 625^{-2} (iii) 627^{-1} (iv) 625^{-1} (v) 622^{-1}

19. The value of $\left(\frac{-4}{3}\right)^3 \times \left(\frac{1}{3}\right)^3$

(i) $\left(\frac{-62}{729}\right)$ (ii) $\left(\frac{-64}{729}\right)^2$ (iii) $\left(\frac{-64}{727}\right)$ (iv) $\left(\frac{-64}{729}\right)$ (v) $\left(\frac{-22}{243}\right)$

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

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

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

(i) $(-1)^{-1}$ (ii) 1 (iii) 4^{-1} (iv) 2^{-1}

22. The value of $(-2)^{-3} \div (-4)^{-3}$

(i) 7 (ii) 8^2 (iii) 5 (iv) 11 (v) 8

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

(i) $\left(\frac{125}{8}\right)^2$ (ii) $\frac{123}{8}$ (iii) $\frac{125}{8}$ (iv) $\frac{125}{6}$ (v) $\frac{127}{8}$

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

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

25. Find the square root of 25

(i) 4 (ii) 8 (iii) 5 (iv) 2 (v) 6

26. Find the cube root of 125

(i) 8 (ii) 5 (iii) 2 (iv) 6 (v) 4

27. Find the 4th root of 16

(i) 1 (ii) 2 (iii) 3 (iv) 0 (v) 5

28. Find the 5th root of 243

(i) 6 (ii) 0 (iii) 3 (iv) 4 (v) 2

29. Find the 6th root of 729

(i) 4 (ii) 6 (iii) 2 (iv) 1 (v) 3

30. Find the square root of $\frac{25}{16}$

(i) $\frac{5}{4}$ (ii) $\frac{5}{6}$ (iii) $\frac{3}{4}$ (iv) $\frac{7}{4}$ (v) $\frac{5}{2}$

31. Find the cube root of $\frac{1}{125}$

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

32. Find the 4th root of $\frac{1}{625}$

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

33. Find the 5th root of $\frac{243}{1024}$

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

34. Find the 6th root of $\frac{64}{729}$

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

35. Find the value of $625^{(\frac{5}{4})}$

(i) 3126 (ii) 3122 (iii) 3128 (iv) 3125 (v) 3124

(5/3)

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

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

37. Find the value of $243^{\left(\frac{-3}{5}\right)}$

(i) $\frac{1}{25}$ (ii) $\frac{1}{9}$ (iii) $\frac{1}{27}$ (iv) $\left(\frac{-1}{27}\right)$ (v) $\frac{1}{29}$

(-3/5)

38. Find the value of $\left(\frac{3125}{1024}\right)$

(i) $\frac{64}{127}$ (ii) $\frac{64}{123}$ (iii) $\frac{66}{125}$ (iv) $\frac{64}{125}$ (v) $\frac{62}{125}$

39. $\left(\frac{1}{2}\right)^{-2} + \left(\frac{1}{2}\right)^{-3} + \left(\frac{1}{2}\right)^{-3} =$

(i) 21 (ii) 22 (iii) 20 (iv) 19 (v) 17

40. $-1^2 =$

(i) ∞ (ii) undefined (iii) 1 (iv) -1 (v) 0

41. $-1^5 =$

(i) -1 (ii) undefined (iii) ∞ (iv) 0 (v) 1

42. $4^0 =$

(i) ∞ (ii) 0 (iii) -1 (iv) undefined (v) 1

43. $0^0 =$

(i) ∞ (ii) -1 (iii) undefined (iv) 0 (v) 1

44. $-4^0 =$

(i) -1 (ii) ∞ (iii) 0 (iv) 1 (v) undefined

45. $0^6 =$

(i) undefined (ii) 0 (iii) ∞ (iv) -1 (v) 1

46. $\sqrt{\frac{121}{81}} =$

(i) 1 (ii) $\frac{11}{7}$ (iii) $\frac{13}{9}$ (iv) $\frac{11}{9}$

47. $\sqrt[3]{\frac{1}{64}} =$

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

48. $\sqrt{0.3600} =$

(i) 0.5 (ii) 0.6 (iii) 0.06 (iv) 0.7 (v) 0.8

49. $\sqrt[3]{2.7440} =$

(i) 1.4 (ii) 0.14 (iii) 1.5 (iv) 1.3 (v) 1.6

50. Simplify $\frac{\sqrt[3]{512}+\sqrt[3]{1000}}{\sqrt[3]{729}-\sqrt[3]{8}} =$

(i) $\frac{20}{7}$ (ii) $\frac{18}{7}$ (iii) $\frac{16}{7}$ (iv) 2 (v) $\frac{18}{5}$

51. Simplify $\frac{\sqrt{9}-\sqrt{121}}{\sqrt{4}+\sqrt{49}} =$

(i) $(\frac{-8}{9})$ (ii) $(\frac{-10}{9})$ (iii) $(\frac{-8}{7})$ (iv) $(\frac{-8}{11})$ (v) $(\frac{-2}{3})$

52. Simplify $3^{-1}+4^{0}+7^{1}+2^{-1}$

(i) $\frac{37}{4}$ (ii) $\frac{55}{6}$ (iii) $\frac{69}{8}$ (iv) $\frac{53}{6}$ (v) $\frac{17}{2}$

Assignment Key

1) (v)	2) (i)	3) (v)	4) (ii)	5) (iii)	6) (v)
7) (iv)	8) (ii)	9) (i)	10) (i)	11) (i)	12) (v)
13) (iii)	14) (iii)	15) (ii)	16) (v)	17) (i)	18) (iv)
19) (iv)	20) (i)	21) (ii)	22) (v)	23) (iii)	24) (iv)
25) (iii)	26) (ii)	27) (ii)	28) (iii)	29) (v)	30) (i)
31) (ii)	32) (iv)	33) (ii)	34) (ii)	35) (iv)	36) (iv)
37) (iii)	38) (iv)	39) (iii)	40) (iii)	41) (i)	42) (v)
43) (iii)	44) (iv)	45) (ii)	46) (iv)	47) (ii)	48) (ii)
49) (i)	50) (ii)	51) (i)	52) (iv)		