EduSahara™ Assignment

Name : Evaluating Expressions Involving Indices

Chapter : Indices

Grade : ICSE Grade IX

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

(i) 81 (ii) 2401 (iii) 125 (iv) 3125 (v) 625

2. Expand the following base power 5^{-2}

(i) $\frac{1}{25}$ (ii) $\frac{1}{125}$ (iii) $\frac{1}{64}$ (iv) $\frac{1}{9}$ (v) $\frac{1}{5}$

3. Expand the following base power $(-5)^{5}$

(i) 625 (ii) 15625 (iii) -32768 (iv) -243 (v) -3125

4. Expand the following base power $(-5)^{-4}$

(i) $(\frac{-1}{3125})$ (ii) $(\frac{-1}{125})$ (iii) $\frac{1}{625}$ (iv) $\frac{1}{16}$ (v) $\frac{1}{4096}$

5. Expand the following base power $\left(\frac{5}{4}\right)^{2}$

(i) $\frac{25}{16}$ (ii) $\frac{125}{64}$ (iii) $\frac{5}{4}$ (iv) $\frac{9}{16}$ (v) $\frac{49}{16}$

6. Expand the following base power $\left(\frac{1}{3}\right)^{-2}$

(i) 9 (ii) 3 (iii) 27 (iv) 1

7. Expand the following base power $\left(\frac{-3}{4}\right)^{2}$

(i) $\frac{1}{16}$ (ii) $(\frac{-3}{4})$ (iii) $(\frac{-27}{64})$ (iv) $\frac{25}{16}$ (v) $\frac{9}{16}$

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

(i) $\frac{9}{16}$ (ii) $(\frac{-27}{64})$ (iii) $\frac{81}{256}$ (iv) $(\frac{-1}{8})$ (v) $(\frac{-27}{8})$

9. The value of $2^2 + 4^2$

(i) 19 (ii) 18 (iii) 20 (iv) 20^2 (v) 23

10. The value of $(-3)^{-2} + 4^{-3}$

(i) $\frac{25}{192}$ (ii) $\frac{73}{574}$ (iii) $\frac{73}{576}$ (iv) $\frac{71}{576}$ (v) $\left(\frac{73}{576}\right)^2$

11. The value of $\left(\frac{4}{3}\right)^3 + \left(\frac{-1}{3}\right)^2$

(i) $\frac{67}{27}$ (ii) $\frac{65}{27}$ (iii) $\frac{23}{9}$ (iv) $\frac{67}{25}$ (v) $\left(\frac{67}{27}\right)^2$

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

(i) $\left(\frac{109}{25}\right)^2$ (ii) $\frac{107}{25}$ (iii) $\frac{109}{25}$ (iv) $\frac{109}{23}$ (v) $\frac{111}{25}$

13. The value of $(-5)^2 - 2^3$

(i) 20 (ii) 15 (iii) 17^2 (iv) 16 (v) 17

14. The value of $(-3)^{-3} - 4^{-2}$

(i) $\left(\frac{-43}{432}\right)^2$ (ii) $\left(\frac{-1}{10}\right)$ (iii) $\left(\frac{-41}{432}\right)$ (iv) $\left(\frac{-5}{48}\right)$ (v) $\left(\frac{-43}{432}\right)$

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

(i) $\left(\frac{5}{27}\right)^2$ (ii) $\frac{1}{9}$ (iii) $\frac{5}{27}$ (iv) $\frac{1}{5}$ (v) $\frac{7}{27}$

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

(i) $\left(\frac{-366}{41}\right)$ (ii) $\left(\frac{-1098}{125}\right)^{2}$ (iii) $\left(\frac{-1096}{125}\right)$ (iv) $\left(\frac{-44}{5}\right)$ (v) $\left(\frac{-1098}{125}\right)$

17. The value of $5^{2} \times 3^{2}$

(i) 224 (ii) 225 (iii) 223 (iv) 225^{2} (v) 227

18. The value of $5^{-3} \times 5^{-2}$

(i) 3123^{-1} (ii) 3126^{-1} (iii) 3127^{-1} (iv) 3125^{-2} (v) 3125^{-1}

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

(i) 36^{-1} (ii) 36^{-2} (iii) 38^{-1} (iv) 33^{-1} (v) 37^{-1}

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

(i) $\left(\frac{8}{75}\right)^{2}$ (ii) $\frac{8}{73}$ (iii) $\frac{8}{75}$ (iv) $\frac{2}{15}$ (v) $\frac{2}{25}$

21. The value of $5^{3} \div 2^{3}$

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

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

(i) $\left(\frac{-2}{9}\right)$ (ii) $\left(\frac{-4}{27}\right)$ (iii) $\left(\frac{-2}{27}\right)$ (iv) $\left(\frac{-4}{25}\right)$ (v) $\left(\frac{-4}{27}\right)^{2}$

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

(i) $\frac{502}{243}$ (ii) $\left(\frac{500}{243}\right)^{2}$ (iii) $\frac{500}{243}$ (iv) $\frac{500}{241}$ (v) $\frac{166}{81}$

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

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

25. Find the square root of 16

(i) 5 (ii) 4 (iii) 1 (iv) 3 (v) 6

26. Find the cube root of 64

(i) 3 (ii) 4 (iii) 1 (iv) 5 (v) 7

27. Find the 4th root of 256

(i) 6 (ii) 4 (iii) 5 (iv) 1 (v) 3

28. Find the 5th root of -1024

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

29. Find the 6th root of 64

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

30. Find the square root of $\frac{1}{9}$

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

31. Find the cube root of $\left(\frac{-1}{8}\right)$

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

32. Find the 4th root of $\frac{625}{81}$

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

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

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

34. Find the 6th root of $\frac{1}{64}$

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

35. Find the value of 3^5

(i) 240 (ii) 244 (iii) 242 (iv) 243 (v) 246

36. Find the value of $(-2)^3$

(i) -6 (ii) -9 (iii) -11 (iv) -8 (v) -7

37. Find the value of $\left(\frac{-5}{4}\right)_{16}$

(i) $\frac{3}{32}$ (ii) $\frac{1}{30}$ (iii) $\frac{1}{34}$ (iv) $\frac{1}{32}$ (v) $(\frac{-1}{32})$

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

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

39. $\left(\frac{1}{6}\right)^{-2} + \left(\frac{1}{4}\right)^{-2} + \left(\frac{1}{6}\right)^{-2} + \left(\frac{1}{3}\right)^{-2} =$

(i) 98 (ii) 94 (iii) 100 (iv) 97 (v) 96

40. $-1^2 =$

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

41. $-1^3 =$

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

42. $2^0 =$

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

43. $0^0 =$

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

44. $-3^0 =$

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

45. $0^1 =$

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

46. $\sqrt{\frac{49}{25}}$ =

(i) 1 (ii) $\frac{7}{3}$ (iii) $\frac{7}{5}$ (iv) $\frac{9}{5}$

47. $\sqrt[3]{\frac{8}{729}}$ =

(i) $\frac{2}{9}$ (ii) $\frac{4}{9}$ (iii) $\frac{2}{7}$ (iv) $\frac{2}{11}$ (v) 0

48. $\sqrt{0.6400}$ =

(i) 0.9 (ii) 1 (iii) 0.8 (iv) 0.7 (v) 0.08

49. $\sqrt[3]{3.3750}$ =

(i) 1.6 (ii) 1.7 (iii) 1.4 (iv) 0.15 (v) 1.5

50. Simplify $\frac{\sqrt[3]{216}+\sqrt[3]{27}}{\sqrt[3]{1000}-\sqrt[3]{125}}$ =

(i) $\frac{7}{5}$ (ii) $\frac{11}{5}$ (iii) $\frac{9}{7}$ (iv) $\frac{9}{5}$ (v) 3

51. Simplify $\frac{\sqrt{100}-\sqrt{36}}{\sqrt{49}+\sqrt{144}}$ =

(i) $\frac{6}{19}$ (ii) $\frac{4}{21}$ (iii) $\frac{4}{17}$ (iv) $\frac{2}{19}$ (v) $\frac{4}{19}$

52. Simplify $9^{-1}+4^{0}+2^{1}+5^{-1}$

(i) $\frac{49}{15}$ (ii) $\frac{155}{47}$ (iii) $\frac{151}{45}$ (iv) $\frac{149}{45}$ (v) $\frac{143}{43}$

Assignment Key

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