

EduSahara™ Learning Center Assignment

Grade : Class IX, ICSE

Chapter : Indices

Name : Evaluating Expressions Involving Indices

1. Expand the following base power 5^5

(i) 32768 (ii) 15625 (iii) 3125 (iv) 32 (v) 625

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

(i) $\frac{1}{16}$ (ii) $\frac{1}{128}$ (iii) $\frac{1}{8}$ (iv) $\frac{1}{32}$ (v) $\frac{1}{625}$

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

(i) 625 (ii) -512 (iii) 25 (iv) -27 (v) -125

4. Expand the following base power $(-2)^{-5}$

(i) $(\frac{-1}{8})$ (ii) $\frac{1}{64}$ (iii) $(\frac{-1}{32})$ (iv) $\frac{1}{16}$ (v) $(\frac{-1}{3125})$

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

(i) $\frac{625}{256}$ (ii) $\frac{3125}{1024}$ (iii) $\frac{125}{64}$ (iv) $\frac{81}{256}$ (v) $\frac{2401}{256}$

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

(i) $\frac{125}{8}$ (ii) $\frac{15625}{64}$ (iii) $\frac{3125}{32}$ (iv) $\frac{625}{256}$ (v) $\frac{625}{16}$

7. Expand the following base power $(\frac{-5}{3})^4$

(i) $(\frac{-125}{27})$ (ii) $(\frac{-3125}{243})$ (iii) $\frac{625}{81}$ (iv) $\frac{2401}{81}$ (v) 1

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

(i) $\frac{-3125}{125}$ (ii) (iii) (iv) (v)

(245) 625 -3125 3125 15625

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

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

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

(i) $\frac{3}{16}$ (ii) $\left(\frac{5}{16}\right)^2$ (iii) $\frac{7}{16}$ (iv) $\frac{5}{14}$ (v) $\frac{5}{16}$

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

(i) $\left(\frac{275}{72}\right)^2$ (ii) $\frac{275}{72}$ (iii) $\frac{55}{14}$ (iv) $\frac{277}{72}$ (v) $\frac{91}{24}$

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

(i) $\frac{1233}{500}$ (ii) $\frac{247}{100}$ (iii) $\frac{1231}{500}$ (iv) $\frac{411}{166}$ (v) $\left(\frac{1233}{500}\right)^2$

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

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

14. The value of $(-4)^{-3} - 5^{-3}$

(i) $\left(\frac{-189}{8000}\right)^2$ (ii) $\left(\frac{-187}{8000}\right)$ (iii) $\left(\frac{-191}{8000}\right)$ (iv) $\left(\frac{-63}{2666}\right)$ (v) $\left(\frac{-189}{8000}\right)$

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

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

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

- (i) $(-31)^2$ (ii) -34 (iii) -28 (iv) -32 (v) -31
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17. The value of $(-5)^2 \times (-5)^2$

- (i) 623 (ii) 625^2 (iii) 625 (iv) 624 (v) 627
-

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

- (i) 1000^{-2} (ii) 1001^{-1} (iii) 997^{-1} (iv) 1000^{-1} (v) 1002^{-1}
-

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

- (i) $\left(-\frac{347}{8}\right)$ (ii) $\left(-\frac{3125}{72}\right)^2$ (iii) $\left(-\frac{625}{14}\right)$ (iv) $\left(-\frac{3125}{72}\right)$ (v) $\left(-\frac{3127}{72}\right)$
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20. The value of $\left(\frac{3}{2}\right)^{-3} \times \left(\frac{5}{2}\right)^{-3}$

- (i) $\left(\frac{64}{3375}\right)^2$ (ii) $\frac{22}{1125}$ (iii) $\frac{64}{3375}$ (iv) $\frac{62}{3375}$ (v) $\frac{64}{3373}$
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21. The value of $4^3 \div 4^2$

- (i) 7 (ii) 3 (iii) 4^2 (iv) 4 (v) 1
-

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

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

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

(i) $\frac{731}{1000}$ (ii) $\frac{729}{998}$ (iii) $\left(\frac{729}{1000}\right)^2$ (iv) $\frac{729}{1000}$ (v) $\frac{727}{1000}$

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

(i) $\frac{2}{81}$ (ii) $\frac{4}{79}$ (iii) $\left(\frac{4}{81}\right)^2$ (iv) $\frac{2}{27}$ (v) $\frac{4}{81}$

25. Find the square root of 4

(i) 4 (ii) 0 (iii) 2 (iv) 1 (v) 3

26. Find the cube root of 125

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

27. Find the 4th root of 256

(i) 4 (ii) 5 (iii) 7 (iv) 2 (v) 3

28. Find the 5th root of 32

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

29. Find the 6th root of 64

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

30. Find the square root of $\frac{1}{16}$

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

31. Find the cube root of $\frac{64}{27}$

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

32. Find the 4th root of $\frac{256}{81}$

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

33. Find the 5th root of $\frac{32}{243}$

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

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

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

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

(i) 27 (ii) 28 (iii) 26 (iv) 24 (v) 29

36. Find the value of $\left(\frac{81}{16}\right)^{(5/4)}$

(i) $\frac{241}{32}$ (ii) $\frac{81}{10}$ (iii) $\frac{245}{32}$ (iv) $\frac{243}{34}$ (v) $\frac{243}{32}$

37. Find the value of $3125^{\left(\frac{-2}{5}\right)}$

(i) $\frac{1}{25}$ (ii) $\frac{1}{27}$ (iii) $\frac{1}{23}$ (iv) $\frac{3}{25}$ (v) $(-\frac{1}{25})$

38. Find the value of $\left(\frac{-2}{3}\right)^{-4}$

(i) $\frac{79}{16}$ (ii) $\frac{9}{2}$ (iii) $\frac{83}{16}$ (iv) $\frac{81}{14}$ (v) $\frac{81}{16}$

39. $\left(\frac{1}{3}\right)^{-4} + \left(\frac{1}{5}\right)^{-3} =$

(i) 207 (ii) 208 (iii) 204 (iv) 206 (v) 205

40. $-1^2 =$

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

41. $-1^7 =$

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

42. $2^0 =$

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

43. $0^0 =$

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

44. $-8^0 =$

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

45. $0^1 =$

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

46. $\sqrt{\frac{121}{16}} =$

(i) $\frac{11}{6}$ (ii) $\frac{11}{4}$ (iii) $\frac{9}{4}$ (iv) $\frac{11}{2}$ (v) $\frac{13}{4}$

47. $\sqrt[3]{\frac{27}{64}} =$

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

48. $\sqrt{0.6400} =$

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

49. $\sqrt[3]{0.0270} =$

(i) 0.4 (ii) 0.2 (iii) 0.5 (iv) 0.3 (v) 0.03

50. Simplify $\frac{\sqrt[3]{27} + \sqrt[3]{125}}{\sqrt[3]{512} - \sqrt[3]{729}} =$

(i) -8 (ii) -7 (iii) -9 (iv) -5 (v) -11

51. Simplify $\sqrt{64} - \sqrt{4} =$

$$\sqrt{81} + \sqrt{16}$$

(i) $\frac{8}{13}$ (ii) $\frac{6}{11}$ (iii) $\frac{4}{13}$ (iv) $\frac{2}{5}$ (v) $\frac{6}{13}$

52. Simplify $7^{-1} + 4^0 + 8^1 + 9^{-1}$

(i) $\frac{565}{61}$ (ii) $\frac{83}{9}$ (iii) $\frac{601}{65}$ (iv) $\frac{65}{7}$ (v) $\frac{583}{63}$

Assignment Key

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