EduSahara™ Assignment

Name : Base Power Concepts

Chapter : Exponents and Powers

Grade : SSC Grade VIII

1. Find the exponential notation of
$5 \times 5 \times 5 \times 5 \times 5 \times 5 \times 5$

(i) 3^{7} (ii) 5^{7} (iii) 5^{6} (iv) 7^{7} (v) 5^{8}

2. Find the exponential notation of
$-7 \times -7 \times -7 \times -7 \times -7 \times -7 \times -7$

(i) $(-7)^{6}$ (ii) $(-7)^{7}$ (iii) $(-9)^{7}$ (iv) $(-7)^{8}$ (v) $(-5)^{7}$

3. Find the exponential notation of
$-13 \times -13 \times -13 \times -13 \times -13$

(i) $(-13)^{5}$ (ii) $(-13)^{4}$ (iii) $(-10)^{5}$ (iv) $(-15)^{5}$ (v) $(-13)^{6}$

4. Find the exponential notation of
$17 \times 17 \times 17 \times 17 \times 17 \times 17 \times 17$

(i) 17^{8} (ii) 17^{6} (iii) 17^{7} (iv) 15^{7} (v) 19^{7}

5. Find the exponential notation of
$\frac{2}{1} \times \frac{2}{1} \times \frac{2}{1} \times \frac{2}{1} \times \frac{2}{1} \times \frac{2}{1} \times \frac{2}{1}$

(i) 2^{5} (ii) 2^{8} (iii) 2^{6} (iv) 4^{7} (v) 2^{7}

6. Simplify the expression $6^{5} \times 6^{5} \times 6^{5}$

(i) 9^{15} (ii) 6^{14} (iii) 6^{15} (iv) 4^{15} (v) 6^{16}

7. Simplify the expression $3^{-4} \times 3^{-4} \times 3^{-4}$

(i) 3^{-13} (ii) 3^{-11} (iii) 6^{-12} (iv) 3^{-14} (v) 3^{-12}

8. Simplify the expression $(-3)^{9} \times (-3)^{9} \times (-3)^{9}$

(i) $(-3)^{30}$ (ii) $(-3)^{28}$ (iii) $(-3)^{27}$ (iv) $(-6)^{27}$ (v) $(-3)^{26}$

9. Simplify the expression $7^{7} \times 7^{3}$

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

10. Simplify the expression $(-2)^{-6} \times (-2)^{-7}$

(i) $(-2)^{-12}$ (ii) $(-2)^{-14}$ (iii) $(-2)^{-13}$ (iv) $(-5)^{-13}$ (v) $(-2)^{-11}$

11. Simplify the expression $3^{7} \times 6^{7} \times 3^{7}$

(i) 52^{7} (ii) 54^{6} (iii) 56^{7} (iv) 54^{7} (v) 54^{8}

12. Simplify the expression $7^{-3} \times 2^{-3} \times 6^{-3}$

(i) 87^{-3} (ii) 84^{-3} (iii) 81^{-3} (iv) 84^{-4} (v) 84^{-2}

13. Simplify the expression $(-6)^{4} \times (-7)^{4} \times (-3)^{4}$

(i) $(-126)^{5}$ (ii) $(-126)^{4}$ (iii) $(-126)^{3}$ (iv) $(-124)^{4}$ (v) $(-129)^{4}$

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

(i) 256 (ii) 4096 (iii) 7776 (iv) 32 (v) 1024

15. Expand the following base power 5^{-4}

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

16. $(-9 \times -3)^{-8/5} =$

(i) $\left(\frac{-8}{5}\right)_{(-9)} \times \left(\frac{-8}{3}\right)_{(-3)}$ (ii) $\left(\frac{-8}{5}\right)_{(-9)} \times \left(\frac{-8}{5}\right)_{(-5)}$ (iii) $\left(\frac{-8}{5}\right)_{(-9)} \times \left(\frac{-8}{5}\right)_{(-3)}$ (iv) $\left(\frac{-8}{5}\right)_{(-9)} \times \left(\frac{-8}{5}\right)_{(-1)}$

(v) $\left(\frac{-8}{5}\right)_{(-9)} \times \left(\frac{-8}{7}\right)_{(-3)}$

17. $(-7 \times -7 \times 2)^{6/5} =$

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

(v) $\left(\frac{6}{5}\right)_{(-7)} \times \left(\frac{6}{5}\right)_{(-4)} \times \left(\frac{6}{5}\right)_{4}$

18. $\left(\frac{7}{1} \times \frac{-5}{1}\right)^{8} =$

(i) $7^{8} \times (-5)^{8}$ (ii) $7^{8} \times (-3)^{8}$ (iii) $7^{8} \times (-5)^{7}$ (iv) $7^{8} \times (-5)^{9}$ (v) $7^{8} \times (-8)^{8}$

19. $\left(\frac{-2}{5}\right)^{5}$ =

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

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

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

21. $\left(\frac{3}{2}\right)^{(7/6)}$ =

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

22. $\frac{\left(\frac{9}{2}\right)^{5}}{\left(\frac{9}{2}\right)^{-9}}$ =

(i) $\left(\frac{9}{2}\right)^{15}$ (ii) $\left(\frac{7}{2}\right)^{14}$ (iii) $\left(\frac{9}{2}\right)^{14}$ (iv) $\left(\frac{11}{2}\right)^{14}$ (v) $\left(\frac{9}{2}\right)^{13}$

23. $\frac{(-3)^5}{(-3)^{-5}}$ =

(i) $(-3)^{11}$ (ii) $(-6)^{10}$ (iii) $(-3)^{9}$ (iv) $(-3)^{12}$ (v) $(-3)^{10}$

24. $[(-7)^3]^{-2}$ =

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

25. The multiplicative inverse of 7^{-8} is

(i) $\left(\frac{1}{7}\right)^{8}$ (ii) $(-7)^{-8}$ (iii) 1 (iv) 0 (v) 7^{8}

26. The multiplicative inverse of $\left(\frac{1}{3}\right)^{9}$ is

(i) $\left(\frac{1}{3}\right)^{-9}$ (ii) 1 (iii) 0 (iv) $\left(\frac{-1}{3}\right)^{9}$ (v) 3^{-9}

27. Which of the following statements are true?

a) $a^{0} = 1 \ (a \neq 0)$

b) $\left(x^{m}\right)^{n} = \left(x^{n}\right)^{m}$

c) $a^{m} . a^{n} = a^{mn}$

d) $\frac{x^{m}}{x^{n}} = x^{\frac{m}{n}}$

e) $a . x^{m} = a^{m} . x^{m}$

f) $\left(x^{m}\right)^{n} = x^{(m+n)}$

(i) {c,a} (ii) {c,b,a} (iii) {d,b} (iv) {a,b} (v) {e,f,a}

28. $-1^{8} =$

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

29. $-1^{3} =$

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

30. $10^{0} =$

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

31. $0^{0} =$

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

32. $-7^{0} =$

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

33. $0^{3} =$

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

34. Find the reciprocal of 7^{9}

(i) $\left(\frac{1}{7}\right)^{10}$ (ii) $\left(\frac{1}{7}\right)^{9}$ (iii) $\left(\frac{-1}{7}\right)^{9}$ (iv) $\left(\frac{1}{7}\right)^{8}$ (v) $\left(\frac{3}{7}\right)^{9}$

35. Find the reciprocal of $\left(\frac{-4}{9}\right)^{9}$

(i) $\left(\frac{-9}{4}\right)^{8}$ (ii) $\left(\frac{-9}{4}\right)^{10}$ (iii) $\left(\frac{-7}{4}\right)^{9}$ (iv) $\left(\frac{-11}{4}\right)^{9}$ (v) $\left(\frac{-9}{4}\right)^{9}$

Assignment Key

1) (ii)	2) (ii)	3) (i)	4) (iii)	5) (v)	6) (iii)
7) (v)	8) (iii)	9) (v)	10) (iii)	11) (iv)	12) (ii)
13) (ii)	14) (v)	15) (iii)	16) (iii)	17) (iii)	18) (i)
19) (v)	20) (iv)	21) (ii)	22) (iii)	23) (v)	24) (i)
25) (v)	26) (i)	27) (iv)	28) (v)	29) (iii)	30) (iii)
31) (i)	32) (iv)	33) (iv)	34) (ii)	35) (v)	