EduSahara™ Assignment

Name : Base Power Concepts

Chapter : Exponents and Powers

Grade : SSC Grade VIII

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1. Find the exponential notation of
$6 \times 6 \times 6 \times 6 \times 6 \times 6$

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

2. Find the exponential notation of
$-6 \times -6 \times -6 \times -6 \times -6 \times -6 \times -6$

(i) $(-6)^{8}$ (ii) $(-9)^{7}$ (iii) $(-3)^{7}$ (iv) $(-6)^{7}$ (v) $(-6)^{6}$

3. Find the exponential notation of
$-12 \times -12 \times -12 \times -12 \times -12$

(i) $(-12)^{5}$ (ii) $(-12)^{4}$ (iii) $(-15)^{5}$ (iv) $(-12)^{6}$ (v) $(-9)^{5}$

4. Find the exponential notation of
$10 \times 10 \times 10 \times 10$

(i) 12^{4} (ii) 10^{5} (iii) 8^{4} (iv) 10^{4} (v) 10^{3}

5. Find the exponential notation of
$\frac{7}{5} \times \frac{7}{5} \times \frac{7}{5} \times \frac{7}{5} \times \frac{7}{5}$

(i) 1 (ii) $\left(\frac{7}{5}\right)^{6}$ (iii) $\left(\frac{9}{5}\right)^{5}$ (iv) $\left(\frac{7}{5}\right)^{5}$ (v) $\left(\frac{7}{5}\right)^{4}$

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

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

7. Simplify the expression $2^{-9} \times 2^{-9} \times 2^{-9}$

(i) 2^{-29} (ii) 5^{-27} (iii) 2^{-28} (iv) 2^{-26} (v) 2^{-27}

8. Simplify the expression $(-4)^{5} \times (-4)^{5} \times (-4)^{5}$

(i) $(-7)^{15}$ (ii) $(-4)^{16}$ (iii) $(-4)^{14}$ (iv) $(-4)^{15}$ (v) $(-1)^{15}$

9. Simplify the expression $2^{2} \times 2^{5} \times 2^{6}$

(i) 2^{14} (ii) 4^{13} (iii) 2^{11} (iv) 2^{13} (v) 2^{12}

10. Simplify the expression $(-7)^{-9} \times (-7)^{-3}$

(i) $(-7)^{-12}$ (ii) $(-7)^{-13}$ (iii) $(-7)^{-11}$ (iv) $(-5)^{-12}$ (v) $(-9)^{-12}$

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

(i) 153^{6} (ii) 150^{7} (iii) 150^{6} (iv) 148^{6} (v) 150^{5}

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

(i) 42^{-6} (ii) 44^{-6} (iii) 42^{-5} (iv) 39^{-6} (v) 42^{-7}

13. Simplify the expression $(-2)^{4} \times (-5)^{4}$

(i) 10^{4} (ii) 12^{4} (iii) 10^{5} (iv) 10^{3} (v) 8^{4}

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

(i) 3125 (ii) 16 (iii) 32 (iv) 8 (v) 64

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

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

16. $(-3 \times 6)^{-6} =$

(i) $(-3)^{-6} \times 6^{-7}$ (ii) $(-3)^{-6} \times 6^{-6}$ (iii) $(-3)^{-6} \times 4^{-6}$ (iv) $(-3)^{-6} \times 8^{-6}$ (v) $(-3)^{-6} \times 6^{-5}$

17. $(5 \times -3 \times 7)^{7/4} =$

(i) $5^{\left(\frac{7}{4}\right)} \times_{(-3)}^{\left(\frac{7}{4}\right)} \times_{7}^{\left(\frac{7}{4}\right)}$ (ii) $5^{\left(\frac{7}{4}\right)} \times_{(-3)}^{\left(\frac{7}{6}\right)} \times_{7}^{\left(\frac{7}{6}\right)}$ (iii) $5^{\left(\frac{7}{4}\right)} \times_{(-3)}^{\left(\frac{9}{4}\right)} \times_{9}^{\left(\frac{7}{4}\right)}$ (iv) $5^{\left(\frac{7}{4}\right)} \times_{(-6)}^{\left(\frac{7}{4}\right)} \times_{4}^{\left(\frac{7}{4}\right)}$

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

18. $\left(\frac{-5}{1} \times \frac{7}{1}\right)^{-9} =$

(i) $(-5)^{-9} \times 5^{-9}$ (ii) $(-5)^{-9} \times 7^{-9}$ (iii) $(-5)^{-9} \times 7^{-8}$ (iv) $(-5)^{-9} \times 10^{-9}$ (v) $(-5)^{-9} \times 7^{-10}$

19. $\left(\frac{5}{2}\right)^{8} =$

(i) $\frac{5^{8}}{5^{8}}$ (ii) $\frac{5^{8}}{2^{5}}$ (iii) $\frac{5^{9}}{2^{8}}$ (iv) $\frac{5^{8}}{2^{8}}$ (v) $\frac{5^{7}}{2^{8}}$

20. $(-9)^{-8}$ =

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

21. $\left(\frac{-3}{4}\right)^{(8/7)}$ =

(i) $\frac{\left(\frac{8}{7}\right)^{(-3)}}{\left(\frac{8}{7}\right)^{4}}$ (ii) $\frac{\left(\frac{8}{7}\right)^{(-3)}}{1}$ (iii) $\frac{\left(\frac{8}{7}\right)^{(-3)}}{\left(\frac{8}{7}\right)^{6}}$ (iv) $\frac{\left(\frac{8}{9}\right)^{(-3)}}{\left(\frac{8}{7}\right)^{4}}$ (v) $\frac{\left(\frac{8}{5}\right)^{(-3)}}{\left(\frac{8}{7}\right)^{4}}$

22. $\frac{\left(\frac{4}{3}\right)^{5}}{\left(\frac{4}{3}\right)^{-7}}$ =

(i) $\left(\frac{4}{3}\right)^{11}$ (ii) 2^{12} (iii) $\left(\frac{2}{3}\right)^{12}$ (iv) $\left(\frac{4}{3}\right)^{12}$ (v) $\left(\frac{4}{3}\right)^{13}$

23. $\frac{2^{-3}}{2^{-4}}$ =

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

24. $[6^{-4}]^5$ =

(i) 6^{-21} (ii) 3^{-20} (iii) 6^{-19} (iv) 9^{-20} (v) 6^{-20}

25. The multiplicative inverse of 8^{-3} is

(i) 1 (ii) 0 (iii) 8^3 (iv) $\left(\frac{1}{8}\right)^{3}$ (v) $(-8)^{-3}$

26. The multiplicative inverse of $\left(\frac{1}{6}\right)^{9}$ is

(i) 1 (ii) $\left(\frac{1}{6}\right)^{-9}$ (iii) 6^{-9} (iv) 0 (v) $\left(\frac{-1}{6}\right)^{9}$

27. Which of the following statements are true?

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

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

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

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

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

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

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

28. $-1^{8} =$

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

29. $-1^{9} =$

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

30. $4^{0} =$

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

31. $0^{0} =$

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

32. $-5^{0} =$

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

33. $0^{3} =$

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

34. Find the reciprocal of 7^{7}

(i) $\left(\frac{1}{7}\right)^{8}$ (ii) $\left(\frac{-1}{7}\right)^{7}$ (iii) $\left(\frac{1}{7}\right)^{6}$ (iv) $\left(\frac{1}{7}\right)^{7}$ (v) $\left(\frac{3}{7}\right)^{7}$

35. Find the reciprocal of $\left(\frac{-4}{8}\right)^6$

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

Assignment Key

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