EduSahara™ Assignment

Name : Laws of Exponents for Real Numbers

Chapter : Number Systems

Grade : CBSE Grade IX

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1. $(5 \times 6)^{8/7} =$

(i) $5^{(\frac{8}{7})} \times 6^{(\frac{8}{7})}$ (ii) $5^{(\frac{8}{7})} \times 6^{(\frac{8}{9})}$ (iii) $5^{(\frac{8}{7})} \times 4^{(\frac{8}{7})}$ (iv) $5^{(\frac{8}{7})} \times 9^{(\frac{8}{7})}$ (v) $5^{(\frac{8}{7})} \times 6^{(\frac{8}{5})}$

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

(i) $(-5)^{(\frac{7}{2})} \times 9^{(\frac{7}{2})} \times (-2)^{(\frac{9}{2})}$ (ii) $(-5)^{(\frac{7}{2})} \times 7^{(\frac{7}{4})} \times (-2)^{(\frac{7}{4})}$ (iii) $(-5)^{(\frac{7}{2})} \times 4^{(\frac{7}{2})} \times (-4)^{(\frac{7}{2})}$

(iv) $(-5)^{(\frac{7}{2})} \times 7^{(\frac{7}{2})} \times (-2)^{(\frac{7}{2})}$ (v) $(-5)^{(\frac{7}{2})} \times 7^7 \times (-2)^7$

3. $((\frac{-4}{5}) \times \frac{5}{2})^{-3} =$

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

4. $(\frac{9}{8} \times \frac{3}{2} \times (\frac{-5}{9}))^5 =$

(i) $(\frac{9}{8})^5 \times (\frac{3}{2})^6 \times (\frac{-5}{9})^6$ (ii) $(\frac{9}{8})^5 \times (\frac{5}{2})^5 \times (\frac{-1}{3})^5$ (iii) $(\frac{9}{8})^5 \times (\frac{3}{2})^5 \times (\frac{-5}{9})^5$ (iv) $(\frac{9}{8})^5 \times (\frac{1}{2})^5 \times (\frac{-7}{9})^5$

(v) $(\frac{9}{8})^5 \times (\frac{3}{2})^4 \times (\frac{-5}{9})^4$

5. $(\frac{-9}{8})^8 =$

(i) $\frac{(-9)^8}{11^8}$ (ii) $\frac{(-9)^9}{8^8}$ (iii) $\frac{(-9)^8}{5^8}$ (iv) $\frac{(-9)^8}{8^8}$ (v) $\frac{(-9)^7}{8^8}$

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

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

7. $\left[\left(\frac{5}{4}\right)_{(-3)}\right]^{-2}$ =

(i) $\left(\frac{-5}{2}\right)_{(-3)}$ (ii) $\left(\frac{-5}{2}\right)_{(-5)}$ (iii) $(-3)^{-3}$ (iv) $\left(\frac{-9}{4}\right)_{(-3)}$ (v) $\left(\frac{-3}{2}\right)_{(-3)}$

8. $\left[\left(\frac{3}{2}\right)_{3}\right]^{2}$ =

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

9. $\left[\left(\frac{-3}{8}\right)^{-4}\right]^{4}$ =

(i) $\left(\frac{-3}{8}\right)^{-16}$ (ii) $\left(\frac{-3}{8}\right)^{-17}$ (iii) $\left(\frac{-5}{8}\right)^{-16}$ (iv) $\left(\frac{-1}{8}\right)^{-16}$ (v) $\left(\frac{-3}{8}\right)^{-15}$

10. $\left[\left(\frac{-3}{7}\right)^{(4/3)}\right]^{-2}$ =

(i) $\left(\frac{-1}{7}\right)^{(-8/3)}$ (ii) $\left(\frac{-3}{7}\right)^{(-8/3)}$ (iii) $\left(\frac{-5}{7}\right)^{(-8/3)}$ (iv) $\left(\frac{-3}{7}\right)^{(-12/5)}$ (v) $\left(\frac{-3}{7}\right)^{-4}$

11. $\left[\left(\frac{-4}{7}\right)^{(-3/4)}\right]^{3}$ =

(i) $\left(\frac{-2}{7}\right)^{(-9/4)}$ (ii) $\left(\frac{-6}{7}\right)^{(-9/4)}$ (iii) $\left(\frac{-4}{7}\right)^{(-5/2)}$ (iv) $\left(\frac{-4}{7}\right)^{(-9/4)}$ (v) $\left(\frac{-4}{7}\right)^{(-13/6)}$

12. $\sqrt[19]{7} \times \sqrt[19]{2} =$

(i) $\sqrt[17]{14}$ (ii) $\sqrt[19]{14}$ (iii) $\sqrt[21]{14}$ (iv) $\sqrt[19]{16}$ (v) $\sqrt[19]{12}$

13. $\frac{\sqrt[4]{3}}{\sqrt[4]{4}} =$

(i) $\sqrt[6]{\frac{3}{4}}$ (ii) $\sqrt[4]{\frac{5}{4}}$ (iii) $\sqrt[4]{\frac{3}{4}}$ (iv) $\sqrt{\frac{3}{4}}$ (v) $\sqrt[4]{\frac{1}{4}}$

14. $\frac{6\sqrt[3]{6}}{2\sqrt[3]{9}} =$

(i) $\sqrt[3]{20}$ (ii) 18 (iii) $\sqrt[3]{15}$ (iv) $\sqrt[5]{18}$ (v) $\sqrt[3]{18}$

15. $\frac{\sqrt[8]{12}}{\sqrt[8]{15}} =$

(i) $\sqrt[8]{\frac{6}{5}}$ (ii) $\sqrt[6]{\frac{4}{5}}$ (iii) $\sqrt[10]{\frac{4}{5}}$ (iv) $\sqrt[8]{\frac{2}{5}}$ (v) $\sqrt[8]{\frac{4}{5}}$

16. $\frac{8\sqrt[3]{18}}{5\sqrt[3]{16}} =$

(i) $\sqrt[5]{\frac{576}{125}}$ (ii) $\sqrt[3]{\frac{576}{125}}$ (iii) $\sqrt[3]{\frac{578}{125}}$ (iv) $\sqrt[3]{\frac{574}{125}}$ (v) $\frac{576}{125}$

17. $\sqrt[3]{15^{7}} =$

(i) $17^{\left(\frac{7}{3}\right)}$ (ii) $13^{\left(\frac{7}{3}\right)}$ (iii) $15^{\left(\frac{7}{3}\right)}$ (iv) $15^{\left(\frac{3}{7}\right)}$ (v) 15^{7}

18. $\sqrt[8]{2} =$

(i) $\left(\frac{1}{2}\right)^{(1/8)}$ (ii) 2^{8} (iii) $5^{\left(\frac{1}{8}\right)}$ (iv) $2^{\left(\frac{1}{8}\right)}$ (v) $2^{\left(\frac{1}{6}\right)}$

19. $22^{(\frac{1}{8})}$ =

(i) $\sqrt[1]{8^{22}}$ (ii) $\sqrt[8]{24}$ (iii) $\sqrt[6]{22}$ (iv) $\sqrt[8]{20}$ (v) $\sqrt[8]{22}$

20. 6^7 =

(i) $(\frac{1}{6})^{-8}$ (ii) $(\frac{-1}{6})^{-7}$ (iii) $(\frac{1}{6})^{-6}$ (iv) $(\frac{1}{6})^{-7}$ (v) $(\frac{1}{2})^{-7}$

21. 3^{-7} =

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

22. $(\frac{-9}{8})^{-2}$ =

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

23. $(\frac{7}{2})^{(-8/3)}$ =

(i) $(\frac{2}{7})^{4}$ (ii) $(\frac{2}{7})^{(12/5)}$ (iii) $(\frac{4}{7})^{(8/3)}$ (iv) $(\frac{2}{7})^{2}$ (v) $(\frac{2}{7})^{(8/3)}$

24. $\frac{(-2)^5}{(-2)^2}$ =

(i) $(-2)^3$ (ii) $(-2)^5$ (iii) $(-2)^2$ (iv) $(-2)^4$ (v) $(-5)^3$

$\left(\frac{9}{8}\right)^{-7}$

25. $\frac{\quad}{\left(\frac{9}{8}\right)^{6}} =$

(i) $\left(\frac{11}{8}\right)^{-13}$ (ii) $\left(\frac{9}{8}\right)^{-12}$ (iii) $\left(\frac{9}{8}\right)^{-14}$ (iv) $\left(\frac{7}{8}\right)^{-13}$ (v) $\left(\frac{9}{8}\right)^{-13}$

$\left(\frac{-4}{3}\right)^{(-6)}$

26. $\frac{\quad}{(-6)^{5}} =$

(i) $(-6)^{\left(\frac{-31}{5}\right)}$ (ii) $(-8)^{\left(\frac{-19}{3}\right)}$ (iii) $(-6)^{\left(\frac{-19}{3}\right)}$ (iv) $(-6)^{-7}$ (v) $(-3)^{\left(\frac{-19}{3}\right)}$

$\left(\frac{-7}{3}\right)^{(-5/2)}$

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

(i) $\left(\frac{-5}{3}\right)^{(-15/4)}$ (ii) $\left(\frac{-7}{3}\right)^{(-9/2)}$ (iii) $\left(\frac{-7}{3}\right)^{(-15/4)}$ (iv) $\left(\frac{-7}{3}\right)^{(-7/2)}$ (v) $(-3)^{\left(\frac{-15}{4}\right)}$

28. $[7^{4}]^{-5} =$

(i) 7^{-20} (ii) 10^{-20} (iii) 7^{-21} (iv) 7^{-19} (v) 4^{-20}

29. $[6^{-2}]^{-2} =$

(i) 6^{4} (ii) 9^{4} (iii) 6^{5} (iv) 6^{3} (v) 4^{4}

30. $\left[\left(\frac{9}{2}\right)^{2}\right]^{4/3}$ =

(i) $\left(\frac{11}{2}\right)^{(8/3)}$ (ii) $\left(\frac{9}{2}\right)^{(8/3)}$ (iii) $\left(\frac{9}{2}\right)^{4}$ (iv) $\left(\frac{9}{2}\right)^{(12/5)}$ (v) $\left(\frac{7}{2}\right)^{(8/3)}$

31. Simplify the expression $\left(\frac{-8}{9}\right)^{-4} \times \left(\frac{-8}{9}\right)^{-6}$

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

32. Simplify the expression $\left(\frac{5}{3}\right)^{(3/2)} \times \left(\frac{5}{3}\right)^{(7/3)}$

(i) 1 (ii) $\left(\frac{5}{3}\right)^{(29/8)}$ (iii) $\left(\frac{5}{3}\right)^{(23/6)}$ (iv) $\left(\frac{7}{3}\right)^{(23/6)}$ (v) $\left(\frac{5}{3}\right)^{(17/4)}$

33. Simplify the expression $\left(\frac{-2}{7}\right)^{(-5)} \times \left(\frac{-2}{7}\right)^{(-9)}$

(i) $\left(\frac{-2}{7}\right)^{42}$ (ii) $\left(\frac{-2}{7}\right)^{45}$ (iii) $\left(\frac{-2}{5}\right)^{45}$ (iv) $\left(\frac{-2}{9}\right)^{45}$ (v) $\left(\frac{-2}{7}\right)^{48}$

34. Simplify the expression $\left(\frac{9}{2}\right)^{(5/4)} \times \left(\frac{9}{7}\right)^{(5/4)} \times \left(\frac{9}{8}\right)^{(5/4)}$

(i) $\left(\frac{731}{112}\right)^{(5/4)}$ (ii) $\left(\frac{727}{112}\right)^{(5/4)}$ (iii) $\left(\frac{729}{112}\right)^{(5/4)}$ (iv) $\left(\frac{729}{112}\right)^{(5/6)}$ (v) $\left(\frac{729}{112}\right)^{(5/2)}$

35. Simplify $\frac{(-2)^{2}}{2^{-2}}$

(i) 4^{4} (ii) 2^{3} (iii) 2^{4} (iv) 2^{5} (v) 2

36. Simplify $\frac{(-2)^{-2}\times 3^{-2}}{(-2)^{2}\times 3^{2}}$

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

37. Simplify $\frac{4^{-2}\times(-5)^{2}\times(-2)^{2}}{(-3)^{-2}\times(-4)^{-2}\times(-3)^{-2}}$

(i) 90 (ii) 90^{3} (iii) 90^{2} (iv) 93^{2} (v) 87^{2}

38. Simplify $\frac{(-3)^{3}\times(-2)^{-3}}{(-4)^{3}\times(-2)^{3}}$

(i) $\left(\frac{5}{16}\right)^{3}$ (ii) $\left(\frac{3}{16}\right)^{2}$ (iii) $\left(\frac{1}{16}\right)^{3}$ (iv) $\left(\frac{3}{16}\right)^{4}$ (v) $\left(\frac{3}{16}\right)^{3}$

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

(i) $\frac{241}{3125}$ (ii) $\frac{243}{3125}$ (iii) $\frac{49}{625}$ (iv) $\frac{27}{347}$ (v) $\left(\frac{243}{3125}\right)^{2}$

40. The value of $(-5)^{2}\div(-3)^{3}$

(i) $\left(\frac{-25}{27}\right)^{2}$ (ii) -1 (iii) $\left(\frac{-25}{27}\right)$ (iv) $\left(\frac{-23}{27}\right)$

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

(i) $\frac{9}{14}$ (ii) $\left(\frac{9}{16}\right)^{2}$ (iii) $\frac{11}{16}$ (iv) $\frac{9}{16}$ (v) $\frac{7}{16}$

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

(i) $\left(\frac{500}{27}\right)^{2}$ (ii) $\frac{502}{27}$ (iii) $\frac{500}{27}$ (iv) $\frac{166}{9}$ (v) 20

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

(i) $\left(\frac{-9}{32}\right)^{2}$ (ii) $\left(\frac{-11}{32}\right)$ (iii) $\left(\frac{-7}{32}\right)$ (iv) $\left(\frac{-3}{10}\right)$ (v) $\left(\frac{-9}{32}\right)$

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44. Find the value of $25^{\left(\frac{5}{2}\right)}$

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

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45. Find the value of $\left(\frac{27}{8}\right)^{(5/3)}$

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

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46. Find the value of $(-1024)^{\left(\frac{-4}{5}\right)}$

(i) $\frac{3}{256}$ (ii) $\frac{1}{256}$ (iii) $\frac{1}{258}$ (iv) $\frac{1}{254}$ (v) $\left(\frac{-1}{256}\right)$

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47. Find the value of $\left(\frac{4}{9}\right)^{(-5/2)}$

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

Assignment Key

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

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