



1. Simplify the expression $9^{-6} \times 9^{-3} \times 9^{-4}$

- (i) 9^{-14} (ii) 9^{-12} (iii) 12^{-13} (iv) 6^{-13} (v) 9^{-13}

2. If $p^S = q$, $q^t = r$ and $r^u = p$, then $stu =$

- (i) -1 (ii) 1 (iii) $(p+q+r)$ (iv) 0 (v) pqr

3. $(-4 \times -6 \times -6)^{-7} =$

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

4. Simplify $8^{-1} + 3^0 + 6^1 + 5^{-1}$

- (i) $\frac{307}{42}$ (ii) $\frac{293}{40}$ (iii) $\frac{59}{8}$ (iv) $\frac{291}{40}$ (v) $\frac{279}{38}$

$$\left(\frac{9}{2}\right)^4$$

5. $\frac{\quad}{4} =$

$$\left(\frac{9}{2}\right)$$

- (i) $\left(\frac{9}{2}\right)^{-1}$ (ii) $\left(\frac{9}{2}\right)^2$ (iii) $\frac{9}{2}$ (iv) 1 (v) $\left(\frac{9}{2}\right)^{-3}$

6. Simplify the expression $\left(\frac{8}{3}\right)^8 \times \left(\frac{8}{3}\right)^8$

- (i) $\left(\frac{8}{3}\right)^{16}$ (ii) $\left(\frac{10}{3}\right)^{16}$ (iii) $\left(\frac{8}{3}\right)^{15}$ (iv) $\left(\frac{8}{3}\right)^{17}$ (v) 2^{16}

7. Simplify the expression $(-5)^{-7} \times (-5)^{-7}$

- (i) $(-5)^{-15}$ (ii) $(-5)^{-13}$ (iii) $(-5)^{-14}$ (iv) $(-2)^{-14}$ (v) $(-7)^{-14}$

8. Find the exponential notation of $\frac{720}{7}$

- (i) $\frac{2^4 \times 3^2 \times 5}{10}$ (ii) $\frac{2^4 \times 3^2 \times 5}{4}$ (iii) $\frac{2^4 \times 3 \times 5}{7}$ (iv) $\frac{2^4 \times 3^2 \times 5}{7}$ (v) $\frac{2^5 \times 3^2 \times 5}{7}$

9. $\frac{7c^{(-2)}}{8f^{(-8)}} =$

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

10. $((x^4)^7)^8 =$

- (i) $x^{(-11)}$ (ii) x^{19} (iii) x^{36} (iv) x^{20} (v) x^{224}

11. Simplify the expression $6^3 \times 6^3 \times 6^3$

- (i) 3^9 (ii) 6^8 (iii) 8^9 (iv) 6^{10} (v) 6^9

12. $(\frac{1}{2}ghi) \times (-6h^5i^8) \times (-\frac{7}{5}j^3) =$

- (i) $\frac{49}{50}i^{12}gh^4$ (ii) $-3gh^6i^9$ (iii) $\frac{21}{5}gh^9i^{17}$ (iv) $-\frac{294}{25}h^8i^{19}$ (v) $\frac{21}{5}gh^6i^{12}$

13. Simplify the expression $(\frac{9}{5})^6 \times (\frac{9}{5})^5$

- (i) $(\frac{11}{5})^{11}$ (ii) $(\frac{7}{5})^{11}$ (iii) $(\frac{9}{5})^{11}$ (iv) $(\frac{9}{5})^{12}$ (v) $(\frac{9}{5})^{10}$

14. $6u^7 \cdot 4u^4 \cdot 9u^8 \cdot 7u^6 =$

- (i) $17u^{168}$ (ii) $17u^{19}$ (iii) $19u^{168}$ (iv) $168u^{168}$ (v) $1512u^{25}$

15. $7^{-2} =$

- (i) $(\frac{1}{7})^2$ (ii) $\frac{1}{7}$ (iii) $(\frac{1}{7})^3$ (iv) $(\frac{-1}{7})^2$ (v) $(\frac{3}{7})^2$

16. Find the exponential notation of $13 \times 13 \times 13 \times 13 \times 13 \times 13$

- (i) 16^6 (ii) 13^6 (iii) 13^5 (iv) 13^7 (v) 11^6

17. $-7c^4 \cdot -2c^4 \cdot -9c^{(-5)} \cdot -8c^{(-3)} =$

- (i) $3c^{(-112)}$ (ii) $-112c^{(-48)}$ (iii) $-17c^{(-48)}$ (iv) 1008 (v) $-17c^3$

18. Find the exponential notation of
 $-10 \times -10 \times -10 \times -10 \times -10 \times -10 \times -10$

- (i) $(-10)^7$ (ii) $(-10)^8$ (iii) $(-7)^7$ (iv) $(-10)^6$ (v) $(-13)^7$

19. The value of $(-4)^{-3} \times (-2)^{-3}$

- (i) 512^{-1} (ii) 515^{-1} (iii) 509^{-1} (iv) 512^{-2} (v) 513^{-1}

20. Simplify the expression $(-7)^2 \times (-7)^5 \times (-7)^6$

- (i) $(-4)^{13}$ (ii) $(-7)^{14}$ (iii) $(-7)^{12}$ (iv) $(-9)^{13}$ (v) $(-7)^{13}$

21. Simplify the expression $5^4 \times 6^4 \times 3^4$

- (i) 90^4 (ii) 88^4 (iii) 90^5 (iv) 90^3 (v) 93^4

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

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

23. The base in the term 4^9 is

- (i) -4 (ii) 4 (iii) 1 (iv) -9 (v) 9

24. If $(10^{360})^2 = (10^{12})^m$, find m

- (i) 59 (ii) 63 (iii) 58 (iv) 60 (v) 61

25. $(2 \times -9)^{-6} =$

- (i) $2^{-6} \times (-9)^{-6}$ (ii) $2^{-6} \times (-6)^{-6}$ (iii) $2^{-6} \times (-9)^{-5}$ (iv) $2^{-6} \times (-9)^{-7}$ (v) $2^{-6} \times (-12)^{-6}$

Assignment Key

1) (v)	2) (ii)	3) (ii)	4) (ii)	5) (iv)	6) (i)
7) (iii)	8) (iv)	9) (v)	10) (v)	11) (v)	12) (v)
13) (iii)	14) (v)	15) (i)	16) (ii)	17) (iv)	18) (i)
19) (i)	20) (v)	21) (i)	22) (iii)	23) (ii)	24) (iv)
25) (i)					