



1. Simplify the expression $3^7 \times 3^7 \times 3^7$

- (i) 3^{20} (ii) 3^{22} (iii) 1 (iv) 3^{21} (v) 5^{21}

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

- (i) 7^{-18} (ii) 5^{-18} (iii) 5^{-19} (iv) 3^{-18} (v) 5^{-17}

3. Simplify the expression $(-7)^3 \times (-7)^3 \times (-7)^3$

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

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

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

5. Simplify the expression $2^8 \times 2^8$

- (i) 5^{16} (ii) 2^{14} (iii) 2^{16} (iv) 2^{17} (v) 2^{15}

6. Simplify the expression $\left(\frac{7}{5}\right)^{-4} \times \left(\frac{7}{5}\right)^{-4} \times \left(\frac{7}{5}\right)^{-4}$

- (i) 1 (ii) $\left(\frac{7}{5}\right)^{-13}$ (iii) $\left(\frac{7}{5}\right)^{-12}$ (iv) $\left(\frac{7}{5}\right)^{-11}$ (v) $\left(\frac{9}{5}\right)^{-12}$

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

- (i) $\left(\frac{-4}{3}\right)^{18}$ (ii) $(-2)^{18}$ (iii) $\left(\frac{-4}{3}\right)^{19}$ (iv) $\left(\frac{-2}{3}\right)^{18}$ (v) $\left(\frac{-4}{3}\right)^{17}$

8. Simplify the expression $\left(\frac{-8}{3}\right)^{-4} \times \left(\frac{-8}{3}\right)^{-4} \times \left(\frac{-8}{3}\right)^{-4}$

(i) $(-2)^{-12}$ (ii) $\left(\frac{-8}{3}\right)^{-13}$ (iii) $\left(\frac{-8}{3}\right)^{-11}$ (iv) $\left(\frac{-10}{3}\right)^{-12}$ (v) $\left(\frac{-8}{3}\right)^{-12}$

9. Simplify the expression $9^6 \times 9^2 \times 9^7$

(i) 9^{16} (ii) 9^{15} (iii) 12^{15} (iv) 9^{14} (v) 6^{15}

10. Simplify the expression $3^{-4} \times 3^{-2}$

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

11. Simplify the expression $(-3)^5 \times (-3)^6$

(i) $(-3)^{11}$ (ii) $(-3)^{14}$ (iii) $(-5)^{11}$ (iv) $(-3)^{12}$ (v) $(-3)^{10}$

12. Simplify the expression $(-4)^{-5} \times (-4)^{-9} \times (-4)^{-9}$

(i) $(-4)^{-24}$ (ii) $(-4)^{-23}$ (iii) $(-4)^{-22}$ (iv) $(-6)^{-23}$ (v) $(-2)^{-23}$

13. Simplify the expression $\left(\frac{7}{6}\right)^5 \times \left(\frac{7}{6}\right)^6 \times \left(\frac{7}{6}\right)^2$

(i) $\left(\frac{7}{6}\right)^{12}$ (ii) $\left(\frac{7}{6}\right)^{13}$ (iii) $\left(\frac{7}{6}\right)^{14}$ (iv) $\left(\frac{3}{2}\right)^{13}$ (v) $\left(\frac{5}{6}\right)^{13}$

14. Simplify the expression $\left(\frac{4}{3}\right)^{-9} \times \left(\frac{4}{3}\right)^{-4}$

(i) $\left(\frac{4}{3}\right)^{-14}$ (ii) 2^{-13} (iii) $\left(\frac{2}{3}\right)^{-13}$ (iv) $\left(\frac{4}{3}\right)^{-12}$ (v) $\left(\frac{4}{3}\right)^{-13}$

15. Simplify the expression $\left(\frac{-7}{5}\right)^6 \times \left(\frac{-7}{5}\right)^6 \times \left(\frac{-7}{5}\right)^5$

(i) $\left(\frac{-7}{5}\right)^{16}$ (ii) $\left(\frac{-7}{5}\right)^{17}$ (iii) $\left(\frac{-9}{5}\right)^{17}$ (iv) $\left(\frac{-7}{5}\right)^{18}$ (v) $(-1)^{17}$

16. Simplify the expression $\left(\frac{-5}{7}\right)^{-6} \times \left(\frac{-5}{7}\right)^{-4}$

(i) $\left(\frac{-3}{7}\right)^{-10}$ (ii) $(-1)^{-10}$ (iii) $\left(\frac{-5}{7}\right)^{-11}$ (iv) $\left(\frac{-5}{7}\right)^{-10}$ (v) $\left(\frac{-5}{7}\right)^{-9}$

17. Simplify the expression $5^6 \times 7^6 \times 5^6$

(i) 177^6 (ii) 173^6 (iii) 175^7 (iv) 175^5 (v) 175^6

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

(i) 42^{-3} (ii) 42^{-4} (iii) 42^{-2} (iv) 39^{-3} (v) 44^{-3}

19. Simplify the expression $(-9)^3 \times (-9)^3$

(i) 81^2 (ii) 83^3 (iii) 79^3 (iv) 81^4 (v) 81^3

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

(i) $(-172)^{-5}$ (ii) $(-177)^{-5}$ (iii) $(-175)^{-6}$ (iv) $(-175)^{-5}$ (v) $(-175)^{-4}$

21. Simplify the expression $\left(\frac{9}{8}\right)^7 \times \left(\frac{7}{6}\right)^7 \times \left(\frac{9}{8}\right)^7$

(i) $\left(\frac{189}{128}\right)^8$ (ii) $\left(\frac{189}{128}\right)^6$ (iii) $\left(\frac{187}{128}\right)^7$ (iv) $\left(\frac{191}{128}\right)^7$ (v) $\left(\frac{189}{128}\right)^7$

22. Simplify the expression $\left(\frac{9}{7}\right)^{-2} \times \left(\frac{7}{4}\right)^{-2}$

(i) $\left(\frac{7}{4}\right)^{-2}$ (ii) $\left(\frac{9}{4}\right)^{-1}$ (iii) $\left(\frac{11}{4}\right)^{-2}$ (iv) $\left(\frac{9}{4}\right)^{-2}$ (v) $\left(\frac{9}{4}\right)^{-3}$

23. Simplify the expression $(-4)^3 \times \left(\frac{-5}{7}\right)^3$

(i) $\left(\frac{20}{7}\right)^3$ (ii) $\left(\frac{20}{7}\right)^4$ (iii) $\left(\frac{20}{7}\right)^2$ (iv) $\left(\frac{22}{7}\right)^3$ (v) $\left(\frac{18}{7}\right)^3$

24. Simplify the expression $\left(\frac{-7}{5}\right)^{-4} \times \left(\frac{-9}{7}\right)^{-4} \times (-6)^{-4}$

(i) $\left(\frac{-54}{5}\right)^{-5}$ (ii) $\left(\frac{-54}{5}\right)^{-3}$ (iii) $\left(\frac{-54}{5}\right)^{-4}$ (iv) $\left(\frac{-56}{5}\right)^{-4}$ (v) $\left(\frac{-52}{5}\right)^{-4}$

25. Simplify $\frac{3^{-2}}{5^{-2}}$

(i) $\left(\frac{5}{3}\right)^3$ (ii) $\left(\frac{7}{3}\right)^2$ (iii) 1 (iv) $\left(\frac{5}{3}\right)^2$ (v) $\frac{5}{3}$

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

(i) $\left(\frac{3}{32}\right)^2$ (ii) $\left(\frac{5}{32}\right)^2$ (iii) $\frac{3}{32}$ (iv) $\left(\frac{3}{32}\right)^3$ (v) $\left(\frac{1}{32}\right)^2$

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

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

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

(i) $\left(\frac{125}{12}\right)^3$ (ii) $\left(\frac{125}{12}\right)^2$ (iii) $\frac{125}{12}$ (iv) $\left(\frac{41}{4}\right)^2$ (v) $\left(\frac{127}{12}\right)^2$

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

(i) 30^{-1} (ii) 30^{-3} (iii) 32^{-2} (iv) 30^{-2} (v) 28^{-2}

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

(i) 2^{-17} (ii) 5^{-16} (iii) 2^{-16} (iv) 2^{-15} (v) 2^{-19}

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

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

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

- (i) $\frac{1}{2^2 \times 3^{-1} \times 5}$ (ii) $\frac{2}{2^2 \times 3^2 \times 5}$ (iii) $\frac{1}{2^2 \times 3^2 \times 8}$ (iv) $\frac{0}{2^2 \times 3^2 \times 5}$ (v) $\frac{1}{2^2 \times 3^2 \times 5}$

33. Find the reciprocal of 2^9

- (i) $\left(\frac{1}{2}\right)^{10}$ (ii) $\left(\frac{1}{2}\right)^9$ (iii) $\left(\frac{1}{2}\right)^8$ (iv) $\left(\frac{3}{2}\right)^9$ (v) $\left(\frac{-1}{2}\right)^9$

34. Find the reciprocal of $\left(\frac{-9}{7}\right)^3$

- (i) $\left(\frac{-7}{9}\right)^4$ (ii) $\left(\frac{-7}{9}\right)^2$ (iii) $(-1)^3$ (iv) $\left(\frac{-7}{9}\right)^3$ (v) $\left(\frac{-5}{9}\right)^3$

35. $(8^6 \times 5^4)^9 =$

- (i) $8^{36} \times 5^{54}$ (ii) $8^6 \times 5^{36}$ (iii) $8^{54} \times 5^{36}$ (iv) $8^6 \times 5^4$ (v) $8^{54} \times 5^4$

36. $\frac{(9^{(-6)})^{-3} \times (11^2)^{-5} \times (14^{(-5)})^{-2}}{(9^{(-3)})^3 \times (11^4)^{-2} \times (14^{(-2)})^4} =$

- (i) $9^{27} \times 11^{(-2)} \times 14^{19}$ (ii) $9^{27} \times 11^{(-2)} \times 14^{18}$ (iii) $9^{27} \times 11^{(-1)} \times 14^{18}$ (iv) $9^{28} \times 11^{(-2)} \times 14^{18}$

37. $\left[(7^6)^6 \times (7^6)^2 \right] \div 7^{48}$

- (i) 7 (ii) 3 (iii) 0 (iv) 2 (v) 1

38. $\left[\left(\frac{7}{6}\right)^{-4} \times \left(\frac{8}{5}\right)^{-4} \right] \div \left[\left(\frac{6}{7}\right)^4 \times \left(\frac{5}{8}\right)^4 \right] =$

- (i) 1 (ii) $\frac{8}{5}$ (iii) (-1) (iv) $\frac{7}{6}$ (v) 0

Assignment Key

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