



1. $2g^8 \cdot 9g^2 =$

- (i) $11g^{16}$ (ii) $11g^{10}$ (iii) $10g^{18}$ (iv) $18g^{16}$ (v) $18g^{10}$

2. $2e^5 \cdot 7e^3 \cdot 5e^9 =$

- (i) $70e^{135}$ (ii) $70e^{17}$ (iii) $14e^{135}$ (iv) $14e^{17}$ (v) $17e^{70}$

3. $6j^8 \cdot 8j^6 \cdot 4j^5 \cdot 7j^9 =$

- (i) $21j^{19}$ (ii) $21j^{432}$ (iii) $336j^{432}$ (iv) $19j^{336}$ (v) $1344j^{28}$

4. $-5v^8 \cdot -6v^9 =$

- (i) $-11v^{72}$ (ii) $-11v^{17}$ (iii) $17v^{30}$ (iv) $30v^{17}$ (v) $30v^{72}$

5. $-5v^2 \cdot -6v^{(-4)} \cdot -3v^{(-2)} =$

- (i) $-14v^{16}$ (ii) $-90v^{16}$ (iii) $-14v^{(-4)}$ (iv) $-4v^{(-90)}$ (v) $-90v^{(-4)}$

6. $-7x^{(-7)} \cdot -2x^6 \cdot -8x^{(-9)} \cdot -9x^{(-5)} =$

- (i) $-18x^{210}$ (ii) $1008x^{(-15)}$ (iii) $-10x^{(-126)}$ (iv) $-18x^{(-10)}$ (v) $-126x^{210}$

7. Find the square root of $q^2r^4s^2 =$

- (i) $\frac{1}{q^2r^4s^2}$ (ii) qr^2s (iii) qrs^8 (iv) $(q^2r^4s^2)^2$ (v) qrs^{16}

8. $7c^8d^8 \cdot -3c^4d^{(-8)} =$

- (i) $-21c^{12}$ (ii) $-21c^8d^8$ (iii) $21c^{12}d^{16}$ (iv) $4c^{12}$ (v) $10c^{12}$

9. $(x^3)^4 =$

- (i) x (ii) x^3 (iii) x^7 (iv) $4x^3$ (v) x^{12}

10. $\frac{h^{14}}{h^7} =$

- (i) h^{21} (ii) h^{98} (iii) $14h^7$ (iv) h^7 (v) $7h^7$

11. $(v^2 w^4)^7 =$

- (i) $v^9 w^{11}$ (ii) $v^{14} w^{28}$ (iii) $7 v^2 w^4$ (iv) $7 v^9 w^{11}$ (v) $7 v^{14} w^{28}$

12. $(-5v^2 w^5)^3 =$

- (i) $-125 v^6 w^{15}$ (ii) $-125 v^5 w^8$ (iii) $-5 v^6 w^{15}$ (iv) $-15 v^6 w^{15}$ (v) $-15 v^5 w^8$

13. $\left(\frac{k^{19}}{k^6}\right)^5 =$

- (i) $5 k^{13}$ (ii) k^{570} (iii) k^{125} (iv) k^{65} (v) $5 k^{25}$

14. $\left(\frac{x^6 y^4}{z^6}\right)^5 =$

- (i) $\left(\frac{x^{11} y^9}{z^{30}}\right)$ (ii) $\left(\frac{x^{30} y^{20}}{z^{11}}\right)$ (iii) $\left(\frac{x^{11} y^9}{z^{11}}\right)$ (iv) $\left(\frac{5 x^6 y^4}{5 z^6}\right)$ (v) $\left(\frac{x^{30} y^{20}}{z^{30}}\right)$

15. $\frac{u^{16} v^{13}}{u^8 v^8} =$

- (i) $u^{29} v^{16}$ (ii) $u^8 v^{21}$ (iii) $u^8 v^5$ (iv) $u^{24} v^{21}$ (v) $u^{24} v^5$

16. $\frac{c^7}{c^{17}} =$

- (i) c^{10} (ii) $\frac{1}{c^{119}}$ (iii) $\frac{1}{c^{24}}$ (iv) $\frac{1}{c^{10}}$ (v) $\frac{1}{c^{(-10)}}$

17. $(e^3)^{(f+9)} =$

- (i) $e^{(3f-27)}$ (ii) $e^{(f+15)}$ (iii) $e^{(3f+12)}$ (iv) $e^{(3f+27)}$ (v) $e^{(f+30)}$

18. $\left(\frac{i^6}{j^4}\right)^o =$

- (i) $\frac{j^{4o}}{i^{6o}}$ (ii) $\frac{i^{6o}}{j^{4o}}$ (iii) $i^{6o} \cdot j^{4o}$ (iv) $i^{6o} \cdot -j^{4o}$

19. $\left(\frac{q^{7t}}{q^{(t+6)}}\right) =$

- (i) $q^{(10t^2-19t-42)}$ (ii) $q^{(6t-6)}$ (iii) $q^{(8t+6)}$ (iv) $q^{(6t-5)}$ (v) $q^{(2t+6)}$

20. $\left(\frac{q^7}{q^4}\right)^7 =$

- (i) q^{11} (ii) $7q^{21}$ (iii) q^{21} (iv) q^4 (v) q^7

21. $\left(c^{22c}\right)^6 =$

- (i) c^{22c} (ii) $c^{(22c+6)}$ (iii) $6c^{132c}$ (iv) c^{132c}

22. $\left(e^4 \cdot f^3\right)^3 =$

- (i) $e \cdot 1$ (ii) $e^{12} \cdot f^9$ (iii) $e^7 \cdot f^6$ (iv) $e^{12} \cdot f^6$ (v) $e^8 \cdot f^9$

23. $\left((f^2)^{(-6)}\right)^{-6} =$

- (i) $f^{(-18)}$ (ii) $f^{(-6)}$ (iii) f^{14} (iv) $f^{(-10)}$ (v) f^{72}

24. $\left(3i \cdot 4j^{(-4)}\right)^{-1} =$

- (i) $\frac{-3j^4}{-4i^{(-1)}}$ (ii) $\frac{i^4}{12j^{(-1)}}$ (iii) $\frac{3j^4}{4i^{(-1)}}$ (iv) $\frac{j^4}{12i}$ (v) $j^4 \cdot 12i^{(-1)}$

25. $(q-r)^{(-5)} \cdot (q-r)^{(-6)} =$

- (i) $(q-r)^{(-5)}$ (ii) $(q-r)$ (iii) $(q-r)^{(-11)}$ (iv) $(q-r)^{30}$ (v) $(q-r)^{(-6)}$

26. $\left(\frac{\sqrt[2]{w^2}}{4}\right)^{-2} =$

- (i) $\frac{16w^4}{\sqrt[4]{w^4}}$ (ii) $\frac{1}{16}$ (iii) $\frac{16\sqrt[4]{w^4}}{w^2}$ (iv) $\frac{\sqrt[4]{w^4}}{16w^{(-4)}}$ (v) $\frac{16}{1}$

27. $\sqrt[3]{\frac{9x^6}{25y^8}} =$

- (i) $\frac{5x^3}{3y^4}$ (ii) $\frac{3y^4}{5x^3}$ (iii) $\frac{3x^3}{5y^4}$ (iv) $\frac{3x^6}{5y^8}$ (v) $\frac{3x^{12}}{5y^{16}}$

28. Find the square root of $\frac{4e^6f^{12}}{9g^8}$

- (i) $\frac{2e^6f^6}{3g^4}$ (ii) $\frac{2e^3f^6}{3g^4}$ (iii) $\frac{2e^3f^6}{3g^8}$ (iv) $\frac{2e^3f^{12}}{3g^4}$ (v) $\frac{2e^6f^{12}}{3g^8}$

29. Find the square root of $\frac{25x^{14}}{121y^{14}}$

- (i) $\frac{5x^{14}}{11y^{14}}$ (ii) $\frac{5x^7}{11y^7}$ (iii) $\frac{5x^{28}}{11y^{28}}$ (iv) $\frac{5x^7}{11y^{14}}$ (v) $\frac{5x^{14}}{11y^7}$

30. $\frac{m^{(-9)}}{2r^{(-5)}} =$

- (i) $\frac{m^5}{2r^9}$ (ii) $\frac{2r^5}{m^9}$ (iii) $\frac{r^{(-5)}}{2m^{(-9)}}$ (iv) $\frac{2r^{(-5)}}{m^{(-9)}}$ (v) $\frac{r^5}{2m^9}$

31. Which of the following statements are true?

- a) $\frac{x^m}{x^n} = x^{\frac{m}{n}}$
 b) $(x^m)^n = x^{(m+n)}$
 c) $a^0 = 1$ ($a \neq 0$)
 d) $a^m \cdot a^n = a^{mn}$
 e) $a \cdot x^m = a^m \cdot x^m$
 f) $(x^m)^n = (x^n)^m$
 (i) {a,f,c} (ii) {d,e,c} (iii) {c,f} (iv) {a,c} (v) {b,f}

32. Simplify $\frac{(u^{(k+l)})^5 (u^{(l+m)})^5 (u^{(m+k)})^5}{(u^k \cdot u^l \cdot u^m)}$

- (i) $u^{(10k+10l+10m)}$ (ii) $u^{(4k+4l+4m)}$ (iii) $u^k \cdot u^l \cdot u^m$ (iv) $u^{(5k+5l+5m)}$ (v) $u^{(9k+9l+9m)}$

33. Simplify $\left(\frac{7^j \cdot 64^{(j-1)} \cdot 81^{(j-5)}}{49^{(j-1)} \cdot 8^{(j-5)} \cdot 9^{(j-2)}} \right)$

- (i) $7^{(j+1)} \cdot 8^{(-j+9)} \cdot 9^{(-j-1)}$ (ii) $7^{(-j+2)} \cdot 8^{(-j+9)} \cdot 9^{(-j-1)}$ (iii) $7^{(-j+2)} \cdot 8^{(j+3)} \cdot 9^{(j-8)}$
 (iv) $7^1 \cdot 8^4 \cdot 9^{(-3)}$

34. Find the square root of $a^{(4s+4)} \cdot b^{4s} \cdot c^{(4s-4)}$

- (i) $a^{(2s-2)} \cdot b^{2s} \cdot c^{(2s+2)}$ (ii) $4a^{(s+1)} \cdot 4b^s \cdot 4c^{(s-1)}$ (iii) $a^{(s+2)} \cdot b^{4s} \cdot c^{(s-2)}$
 (iv) $a^{(2s+2)} \cdot b^{2s} \cdot c^{(2s-2)}$

35. $(d^4 + e^4)^0 =$

- (i) $d^4 + e^4$ (ii) 1 (iii) 3 (iv) (-1) (v) 0

36. $\left(\frac{5}{8}ghi\right) \times (3h^9i^4) \times \left(-\frac{7}{9}i^6\right) =$

- (i) $\frac{15}{8}gh^{10}i^5$ (ii) $-\frac{35}{24}gh^{10}i^{11}$ (iii) $\frac{245}{648}i^{11}gh^7$ (iv) $-\frac{35}{24}gh^{16}i^9$ (v) $\frac{49}{27}h^{15}i^{14}$

Assignment Key

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