



1. Simplify the expression  $7^2 \times 7^2 \times 7^2$

- (i)  $7^5$  (ii)  $7^7$  (iii)  $5^6$  (iv)  $7^6$  (v)  $10^6$

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

- (i)  $6^{-12}$  (ii)  $6^{-13}$  (iii)  $3^{-12}$  (iv)  $6^{-11}$  (v)  $9^{-12}$

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

- (i)  $(-5)^{-14}$  (ii)  $(-7)^{-15}$  (iii)  $(-5)^{-16}$  (iv)  $(-2)^{-15}$  (v)  $(-5)^{-15}$

4. Simplify the expression  $\left(\frac{9}{8}\right)^{-2} \times \left(\frac{9}{8}\right)^{-2} \times \left(\frac{9}{8}\right)^{-2}$

- (i)  $\left(\frac{7}{8}\right)^{-6}$  (ii)  $\left(\frac{9}{8}\right)^{-6}$  (iii)  $\left(\frac{9}{8}\right)^{-7}$  (iv)  $\left(\frac{9}{8}\right)^{-5}$  (v)  $\left(\frac{11}{8}\right)^{-6}$

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

- (i)  $3^{18}$  (ii)  $6^{18}$  (iii)  $6^{17}$  (iv)  $9^{18}$  (v)  $6^{19}$

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

- (i)  $9^{-15}$  (ii)  $11^{-14}$  (iii)  $9^{-14}$  (iv)  $7^{-14}$  (v)  $9^{-13}$

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

- (i)  $\left(\frac{-4}{5}\right)^{12}$  (ii)  $\left(\frac{-2}{5}\right)^{11}$  (iii)  $\left(\frac{-2}{5}\right)^{14}$  (iv)  $\left(\frac{-2}{5}\right)^{13}$  (v)  $\left(\frac{-2}{5}\right)^{12}$

8. Simplify the expression  $(-6)^9 \times (-2)^9 \times (-9)^9$

- (i)  $(-108)^{10}$  (ii)  $(-108)^8$  (iii)  $(-111)^9$  (iv)  $(-105)^9$  (v)  $(-108)^9$

9. Simplify the expression  $(-6)^{-8} \times (-7)^{-8} \times (-7)^{-8}$

- (i)  $(-296)^{-8}$  (ii)  $(-294)^{-9}$  (iii)  $(-294)^{-7}$  (iv)  $(-294)^{-8}$  (v)  $(-292)^{-8}$

10. Simplify the expression  $\left(\frac{9}{2}\right)^{-9} \times \left(\frac{8}{3}\right)^{-9}$

- (i)  $15^{-9}$  (ii)  $12^{-8}$  (iii)  $12^{-9}$  (iv)  $10^{-9}$  (v)  $12^{-10}$

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

- (i)  $\left(\frac{112}{27}\right)^5$  (ii)  $\left(\frac{38}{9}\right)^{(5/3)}$  (iii)  $\left(\frac{110}{27}\right)^{(5/3)}$  (iv)  $\left(\frac{112}{27}\right)^{(5/3)}$  (v)  $4\frac{4}{27}$

12. Simplify  $\frac{5^{-2}}{5^{-2}}$

- (i) -1 (ii) 2 (iii) 1 (iv) 0 (v) 4

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

- (i)  $2^5$  (ii)  $5^6$  (iii)  $2^6$  (iv)  $2^7$  (v)  $2^4$

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

- (i)  $362^{-2}$  (ii)  $360^{-2}$  (iii)  $360^{-1}$  (iv)  $357^{-2}$  (v)  $360^{-3}$

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

- (i)  $800^{-2}$  (ii)  $802^{-2}$  (iii)  $800^{-3}$  (iv)  $797^{-2}$  (v)  $800^{-1}$

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

- (i)  $(-4)^5$  (ii)  $(-8)^5$  (iii)  $(-6)^5$  (iv)  $(-6)^4$  (v)  $(-6)^6$

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

- (i)  $\frac{5^4}{2^8 \times 3^2}$  (ii)  $\frac{5^3}{2^8 \times 3^2}$  (iii)  $\frac{5^3}{(-1)^8 \times 3^2}$  (iv)  $\frac{5^3}{4^8 \times 3^2}$  (v)  $\frac{5^2}{2^8 \times 3^2}$

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

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

19. Simplify  $\frac{4^{-3} \times 5^{-3} \times 3^{-2} \times 5^{-2}}{5^{-3} \times 3^{-2} \times 2^{-3}}$

- (i)  $\frac{1}{2^3 \times 7^2}$  (ii)  $\frac{2}{2^3 \times 5^2}$  (iii)  $\frac{1}{2^3 \times 2^2}$  (iv)  $\frac{0}{2^3 \times 5^2}$  (v)  $\frac{1}{2^3 \times 5^2}$

20. Simplify  $\left( \frac{6^a \cdot 49^{(a-3)} \cdot 64^{(a-2)}}{36^{(a-3)} \cdot 7^{(a-2)} \cdot 8^{(a-5)}} \right)$

- (i)  $6^{(-a+6)} \cdot 7^{(a-4)} \cdot 8^{(a+1)}$  (ii)  $6^3 \cdot 7^{(-1)} \cdot 8^3$  (iii)  $6^{(-a+6)} \cdot 7^{(-a+1)} \cdot 8^{(-a+8)}$   
 (iv)  $6^{(a+3)} \cdot 7^{(-a+1)} \cdot 8^{(-a+8)}$

## Assignment Key

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