EduSahara™ Assignment

Name : Simplification of Base Power Expressions

Chapter : Exponents and Powers

Grade : SSC Grade VIII

1. Simplify $\frac{(-4)^{2}\times(-5)^{-2}\times3^{-2}\times3^{-2}}{5^{-2}\times5^{-2}\times(-4)^{2}\times(-2)^{2}}$

(i) $\left(\frac{1}{6}\right)^{2}$ (ii) $\frac{5}{18}$ (iii) $\left(\frac{7}{18}\right)^{2}$ (iv) $\left(\frac{5}{18}\right)^{2}$ (v) $\left(\frac{5}{18}\right)^{3}$

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

(i) 10^{-3} (ii) 10^{-2} (iii) 10^{-1} (iv) 12^{-2} (v) 7^{-2}

3. Simplify $\frac{(-2)^{-3}\times(-5)^{-3}\times2^{2}}{(-5)^{-2}\times(-4)^{-2}\times4^{-2}}$

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

4. Simplify $\frac{(-5)^{2}\times5^{2}\times3^{3}}{(-5)^{2}\times(-4)^{3}\times(-2)^{3}\times3^{3}}$

(i) $\frac{3^{3}\times5^{3}}{2^{9}\times3^{3}\times5^{2}}$ (ii) $\frac{3^{4}\times5^{4}}{2^{9}\times3^{3}\times5^{2}}$ (iii) $\frac{3^{3}\times5^{4}}{2^{9}\times3^{3}\times2^{2}}$ (iv) $\frac{3^{3}\times5^{4}}{2^{9}\times3^{3}\times7^{2}}$ (v) $\frac{3^{3}\times5^{4}}{2^{9}\times3^{3}\times5^{2}}$

5. Simplify $\frac{4^{-2}\times(-4)^{-2}\times3^{-2}\times5^{-2}}{(-4)^{-2}\times(-3)^{-2}\times(-3)^{-2}}$

(i) $\frac{3}{20}$ (ii) $\left(\frac{1}{20}\right)^{2}$ (iii) $\left(\frac{1}{4}\right)^{2}$ (iv) $\left(\frac{3}{20}\right)^{3}$ (v) $\left(\frac{3}{20}\right)^{2}$

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

(i) $\left(\frac{-8}{7}\right)_{10}$ (ii) $\left(\frac{-8}{7}\right)_{4}$ (iii) $\left(\frac{-8}{7}\right)_{7}$ (iv) $\left(\frac{-8}{9}\right)_{7}$ (v) $\left(\frac{-8}{5}\right)_{7}$

7. Simplify the expression $(\frac{-4}{3})_{(-3)} \times (\frac{-4}{3})_{(-3)} \times (\frac{-4}{3})_{(-3)}$

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

8. Simplify the expression $(\frac{5}{3})_{(-5)} \times (\frac{7}{5})_{(-5)} \times (\frac{9}{5})_{(-5)}$

(i) $(\frac{81}{17})_{(-5)}$ (ii) $(\frac{73}{15})_{(-5)}$ (iii) $(-5)^{5}$ (iv) $(\frac{73}{15})_{(-2)}$ (v) $(\frac{73}{15})_{(-7)}$

9. Simplify the expression $(\frac{-4}{3})_{(-8)} \times (\frac{-5}{8})_{(-8)}$

(i) $(\frac{-45}{22})_{(-8)}$ (ii) $(\frac{-47}{24})_{(-10)}$ (iii) $(\frac{-49}{26})_{(-8)}$ (iv) $(\frac{-47}{24})_{(-5)}$ (v) $(\frac{-47}{24})_{(-8)}$

10. Simplify $(\frac{w^{e}}{w^{f}})^{(e+f)} (\frac{w^{f}}{w^{g}})^{(f+g)} (\frac{w^{g}}{w^{e}})^{(g+e)}$

(i) -1 (ii) $w^{(e+f+g)}$ (iii) 0 (iv) 1 (v) w

11. Simplify $(t^{b})^{(c-d)} (t^{c})^{(d-b)} (t^{d})^{(b-c)}$

(i) 1 (ii) 0 (iii) t (iv) -1 (v) $t^{(b+c+d)}$

12. Simplify $(v^{(b+c)})^{(b-c)} (v^{(c+d)})^{(c-d)} (v^{(d+b)})^{(d-b)}$

(i) v (ii) 0 (iii) $v^{(b+c+d)}$ (iv) 1 (v) -1

13. Simplify $(\frac{x^{d}}{x^{e}})^{f} (\frac{x^{e}}{x^{f}})^{d} (\frac{x^{f}}{x^{d}})^{e}$

(i) -1 (ii) x (iii) $x^{(d+e+f)}$ (iv) 0 (v) 1

14. Simplify $(\frac{6^{b} . 49^{(b-1)} . 64^{(b-4)}}{36^{(b-1)} . 7^{(b-4)} . 8^{(b-3)}})$

(i) $6^{(-b+2)} . 7^{(b+2)} . 8^{(b-5)}$ (ii) $6^{(-b+2)} . 7^{(-b+7)} . 8^{(-b+2)}$ (iii) $6^{1} . 7^{3} . 8^{(-1)}$

(iv) $6^{(b+1)} . 7^{(-b+7)} . 8^{(-b+2)}$

15. $\dfrac{\left(4^{(-5)}\right)^{6}\times\left(7^{(-2)}\right)^{-3}\times\left(8^{2}\right)^{-4}}{\left(4^{5}\right)^{6}\times\left(7^{(-5)}\right)^{5}\times\left(8^{5}\right)^{4}}=$

(i) $4^{(-60)}\times 7^{31}\times 8^{(-27)}$ (ii) $4^{(-60)}\times 7^{31}\times 8^{(-28)}$ (iii) $4^{(-60)}\times 7^{32}\times 8^{(-28)}$ (iv) $4^{(-59)}\times 7^{31}\times 8^{(-28)}$

16. $\left[\left(3^{5}\right)^{5}\times\left(3^{6}\right)^{3}\right]\div 3^{43}$

(i) 2 (ii) 1 (iii) 3 (iv) 0

17. $\left[\left(\frac{6}{8}\right)^{-5}\times\left(\frac{5}{3}\right)^{-5}\right]\div\left[\left(\frac{8}{6}\right)^{5}\times\left(\frac{3}{5}\right)^{5}\right]=$

(i) $\frac{6}{8}$ (ii) 1 (iii) 0 (iv) (-1) (v) $\frac{5}{3}$

18. Simplify $7^{-1}+4^{0}+8^{1}+3^{-1}$

(i) $\frac{67}{7}$ (ii) $\frac{199}{21}$ (iii) $\frac{217}{23}$ (iv) $\frac{197}{21}$ (v) $\frac{181}{19}$

Assignment Key

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