EduSahara™ Assignment

Name : Simplification of Base Power Expressions

Chapter : Exponents and Powers

Grade : SSC Grade VIII

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

(i) $\left(\frac{48}{5}\right)^{2}$ (ii) $\left(\frac{46}{5}\right)^{2}$ (iii) $\left(\frac{48}{5}\right)^{3}$ (iv) $\frac{48}{5}$ (v) 10^{2}

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

(i) $\frac{2}{2^{9}\times 3^{2}}$ (ii) $\frac{1}{2^{9}\times 3^{2}}$ (iii) $\frac{1}{4^{9}\times 3^{2}}$ (iv) $\frac{0}{2^{9}\times 3^{2}}$ (v) $\frac{1}{2^{9}\times 3^{-1}}$

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

(i) $\frac{2^{5}}{2^{4}\times 5^{7}}$ (ii) $\frac{2^{4}}{2^{4}\times 5^{7}}$ (iii) $\frac{2^{5}}{(-1)^{4}\times 5^{7}}$ (iv) $\frac{2^{6}}{2^{4}\times 5^{7}}$ (v) $\frac{2^{5}}{2^{4}\times 7^{7}}$

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

(i) $\frac{(-1)^{2}\times 2^{4}\times 3^{2}\times 5^{3}}{2^{12}\times 5^{2}}$ (ii) $\frac{-1\times 2^{4}\times 3^{2}\times 5^{3}}{2^{12}\times 3^{2}}$ (iii) $\frac{-2\times 2^{4}\times 3^{2}\times 5^{3}}{2^{12}\times 5^{2}}$ (iv) $\frac{-1\times 2^{4}\times 3^{2}\times 5^{3}}{2^{12}\times 7^{2}}$ (v) $\frac{-1\times 2^{4}\times 3^{2}\times 5^{3}}{2^{12}\times 5^{2}}$

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

(i) $\frac{(-1)^{2}\times 2^{10}\times 3^{2}}{2^{3}\times 3^{2}\times 5^{5}}$ (ii) $\frac{-1\times 2^{10}\times 3^{2}}{2^{3}\times 6^{2}\times 5^{5}}$ (iii) $\frac{-1\times 2^{9}\times 3^{2}}{2^{3}\times 3^{2}\times 5^{5}}$ (iv) $\frac{-1\times 2^{10}\times 3^{2}}{2^{3}\times 3^{-1}\times 5^{5}}$ (v) $\frac{-1\times 2^{10}\times 3^{2}}{2^{3}\times 3^{2}\times 5^{5}}$

6. Simplify the expression $\left(\frac{-2}{5}\right)_{5} \times \left(\frac{-2}{5}\right)_{5}$

(i) $\left(\frac{-4}{5}\right)_{8}$ (ii) $\left(\frac{-4}{5}\right)_{5}$ (iii) $\left(\frac{-4}{7}\right)_{5}$ (iv) $\left(\frac{-4}{3}\right)_{5}$ (v) $\left(\frac{-4}{5}\right)_{3}$

7. Simplify the expression $(-4)^{-2} \times (-4)^{-2} \times (-4)^{-2}$

(i) $(-4)^{-7}$ (ii) $(-4)^{-6}$ (iii) $(-1)^{-6}$ (iv) $(-6)^{-6}$ (v) $(-4)^{-5}$

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

(i) $\left(\frac{11}{4}\right)_{(-7)}$ (ii) $\left(\frac{25}{8}\right)_{(-7)}$ (iii) $\left(\frac{29}{10}\right)_{(-10)}$ (iv) $\left(\frac{29}{10}\right)_{(-4)}$ (v) $\left(\frac{29}{10}\right)_{(-7)}$

9. Simplify the expression $\left(\frac{-2}{5}\right)_{(-3)} \times (-3)^{-4} \times \left(\frac{-3}{4}\right)_{(-3)}$

(i) $\left(\frac{-113}{22}\right)_{(-3)}$ (ii) $\left(\frac{-103}{20}\right)_{(-6)}$ (iii) $\left(\frac{-103}{20}\right)_{(-3)}$ (iv) $\left(\frac{-31}{6}\right)_{(-3)}$ (v) $\left(\frac{-101}{20}\right)_{(-3)}$

10. Simplify $\left(\frac{u^f}{u^g}\right)^{(f+g)} \left(\frac{u^g}{u^h}\right)^{(g+h)} \left(\frac{u^h}{u^f}\right)^{(h+f)}$

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

11. Simplify $\left(v^d\right)^{(e-f)} \left(v^e\right)^{(f-d)} \left(v^f\right)^{(d-e)}$

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

12. Simplify $\left(z^{(a+b)}\right)^{(a-b)} \left(z^{(b+c)}\right)^{(b-c)} \left(z^{(c+a)}\right)^{(c-a)}$

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

13. Simplify $\left(\frac{w^c}{w^d}\right)^{e} \left(\frac{w^d}{w^e}\right)^{c} \left(\frac{w^e}{w^c}\right)^{d}$

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

14. Simplify $\left(\frac{6^e . 49^{(e-3)} . 64^{(e-5)}}{36^{(e-3)} . 7^{(e-5)} . 8^{(e-3)}}\right)$

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

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

15. $\dfrac{\left(9^{(-3)}\right)^{-2}\times\left(11^{2}\right)^{6}\times\left(14^{2}\right)^{6}}{\left(9^{(-4)}\right)^{-4}\times\left(11^{5}\right)^{-2}\times\left(14^{5}\right)^{-4}}=$

(i) $9^{(-10)}\times11^{22}\times14^{33}$ (ii) $9^{(-10)}\times11^{22}\times14^{32}$ (iii) $9^{(-10)}\times11^{23}\times14^{32}$ (iv) $9^{(-9)}\times11^{22}\times14^{32}$

16. $\left[\left(5^{2}\right)^{4}\times\left(5^{2}\right)^{4}\right]\div5^{16}$

(i) 2 (ii) 0 (iii) 5 (iv) 1 (v) 3

17. $\left[\left(\frac{4}{9}\right)^{-2}\times\left(\frac{3}{7}\right)^{-2}\right]\div\left[\left(\frac{9}{4}\right)^{2}\times\left(\frac{7}{3}\right)^{2}\right]=$

(i) (-1) (ii) 1 (iii) $\frac{4}{9}$ (iv) $\frac{3}{7}$ (v) 0

18. Simplify $2^{-1}+6^{0}+4^{1}+5^{-1}$

(i) $\frac{57}{10}$ (ii) $\frac{67}{12}$ (iii) $\frac{11}{2}$ (iv) $\frac{59}{10}$ (v) $\frac{47}{8}$

Assignment Key

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