EduSahara™ Assignment

Name : Base Power Expressions involving Variables

Chapter : Exponents

Grade : ICSE Grade VIII

1. $4m^{8}.2m^{4} =$

   (i) $6m^{12}$ (ii) $6m^{32}$ (iii) $8m^{12}$ (iv) $8m^{32}$ (v) $12m^{8}$

2. $5c^{4}.2c^{2}.8c^{8} =$

   (i) $80c^{14}$ (ii) $15c^{64}$ (iii) $80c^{64}$ (iv) $14c^{80}$ (v) $15c^{14}$

3. $7n^{9}.5n^{5}.2n^{5}.3n^{8} =$

   (i) $19n^{105}$ (ii) $15n^{19}$ (iii) $15n^{360}$ (iv) $105n^{360}$ (v) $210n^{27}$

4. $-3t^{(-4)}.-8t^{4} =$

   (i) $-11t^{(-16)}$ (ii) 0 (iii) $24t^{(-16)}$ (iv) 24 (v) -11

5. $-7s^{(-4)}.-5s^{(-7)}.-4s^{7} =$

   (i) $-16s^{(-4)}$ (ii) $-140s^{196}$ (iii) $-140s^{(-4)}$ (iv) $-16s^{196}$ (v) $-4s^{(-140)}$

6. $-4g^{4}.-2g^{(-3)}.-7g^{(-3)}.-8g^{(-8)} =$

   (i) $-14g^{96}$ (ii) $-14g^{(-2)}$ (iii) $448g^{(-10)}$ (iv) $-2g^{(-64)}$ (v) $-64g^{96}$

7. Find the square root of $t^{4}u^{6}v^{4} =$

   (i) $t^{2}u^{3}v^{2}$ (ii) tuv^{14} (iii) tuv^{96} (iv) $\frac{1}{t^{4}u^{6}v^{4}}$ (v) $(t^{4}u^{6}v^{4})^{2}$

8. $8a^{3}b^{(-4)}.-8a^{3}b^{(-4)} =$

   (i) $-64a^{6}b^{(-8)}$ (ii) 0 (iii) $16a^{6}b^{(-8)}$ (iv) $64a^{6}$ (v) $-64a^{3}b^{(-4)}$

9. $(p^{6})^{8} =$

   (i) p^{14} (ii) $8p^{6}$ (iii) p^{2} (iv) p^{48} (v) p^{6}

10. $\frac{w^{11}}{w^{7}} =$

    (i) w^{18} (ii) w^{77} (iii) $11w^{4}$ (iv) w^{4} (v) $7w^{4}$

11. $(s^2t^4)^2 =$

(i) s^4t^6 (ii) s^4t^8 (iii) $2s^2t^4$ (iv) $2s^4t^8$ (v) $2s^4t^6$

12. $(-5v^3w^6)^4 =$

(i) $-5v^{12}w^{24}$ (ii) $625v^7w^{10}$ (iii) $-20v^7w^{10}$ (iv) $625v^{12}w^{24}$ (v) $-20v^{12}w^{24}$

13. $\left(\frac{u^{15}}{u^5}\right)^5 =$

(i) $5u^{10}$ (ii) u^{100} (iii) u^{375} (iv) u^{50} (v) $5u^{20}$

14. $\left(\frac{u^2v^9}{w^9}\right)^3 =$

(i) $\left(\frac{u^6v^{27}}{w^{12}}\right)$ (ii) $\left(\frac{3u^2v^9}{3w^9}\right)$ (iii) $\left(\frac{u^6v^{27}}{w^{27}}\right)$ (iv) $\left(\frac{u^5v^{12}}{w^{12}}\right)$ (v) $\left(\frac{u^5v^{12}}{w^{27}}\right)$

15. $\frac{h^{20}i^{12}}{h^8i^8} =$

(i) $h^{32}i^{16}$ (ii) $h^{12}i^{20}$ (iii) $h^{28}i^4$ (iv) $h^{28}i^{20}$ (v) $h^{12}i^4$

16. $\frac{f^9}{f^{15}} =$

(i) $\frac{1}{f^{(-6)}}$ (ii) f^6 (iii) $\frac{1}{f^6}$ (iv) $\frac{1}{f^{24}}$ (v) $\frac{1}{f^{135}}$

17. $(g^5)^{(h+4)} =$

(i) $g^{(h+14)}$ (ii) $g^{(h+25)}$ (iii) $g^{(5h+20)}$ (iv) $g^{(5h+9)}$ (v) $g^{(5h-20)}$

18. $\left(\frac{c^7}{d^7}\right)^e =$

(i) $\frac{d^{7e}}{c^{7e}}$ (ii) $\frac{c^{7e}}{d^{7e}}$ (iii) $c^{7e}.d^{7e}$ (iv) $c^{7e}.-d^{7e}$

19. $\left(\frac{a^{(-3d-5)}}{a^{(-8d-9)}}\right) =$

(i) $a^{(19d+8)}$ (ii) $a^{(-11d-14)}$ (iii) $a^{(-28d^2+21d+15)}$ (iv) $a^{(5d+5)}$ (v) $a^{(5d+4)}$

20. $\left(\frac{f^9}{f^2}\right)^3 =$

(i) $3f^{21}$ (ii) f^9 (iii) f^2 (iv) f^{21} (v) f^{11}

21. $\left(f^{21f}\right)^8 =$

(i) $f^{(21f+8)}$ (ii) $8f^{168f}$ (iii) f^{21f} (iv) f^{168f}

22. $\left(b^{(-2)}.c^3\right)^3 =$

(i) $b^{(-6)}.c^6$ (ii) $b^{(-5)}.1$ (iii) $b^{(-4)}.c^9$ (iv) $b.c^6$ (v) $b^{(-6)}.c^9$

23. $\left((i^3)^{(-4)}\right)^{-6} =$

(i) i^{13} (ii) $i^{(-7)}$ (iii) $i^{(-6)}$ (iv) i^{72} (v) $i^{(-18)}$

24. $\left(3p^2.3q^{(-2)}\right)^{-2} =$

(i) $\frac{3q^4}{3p^{(-4)}}$ (ii) $q^4.81p^{(-4)}$ (iii) $\frac{p^4}{81q^{(-4)}}$ (iv) $\frac{q^4}{81p^4}$ (v) $\frac{-6q^4}{-6p^{(-4)}}$

25. $(d-e)^9.(d-e)^2 =$

(i) $(d-e)^2$ (ii) $(d-e)^{11}$ (iii) $(d-e)^9$ (iv) $(d-e)^7$ (v) $(d-e)^{18}$

26. $\left(\frac{4a^2}{b^6}\right)^{-3} =$

(i) $\frac{a^{(-1)}}{64b^3}$ (ii) $\frac{b^{18}}{64a^6}$ (iii) $\frac{64a^{(-6)}}{b^{(-18)}}$ (iv) $\frac{64a^{(-1)}}{b^3}$ (v) $\frac{a^{(-6)}}{64b^6}$

27. $\sqrt{\frac{c^4}{4d^6}} =$

(i) $\frac{d^3}{2c^2}$ (ii) $\frac{c^4}{2d^6}$ (iii) $\frac{c^2}{2d^3}$ (iv) $\frac{c^8}{2d^{12}}$ (v) $\frac{2c^2}{d^3}$

28. Find the square root of $\frac{81s^6t^{10}}{121u^{12}}$

(i) $\frac{9s^6t^5}{11u^6}$ (ii) $\frac{9s^3t^5}{11u^6}$ (iii) $\frac{9s^6t^{10}}{11u^{12}}$ (iv) $\frac{9s^3t^{10}}{11u^6}$ (v) $\frac{9s^3t^5}{11u^{12}}$

29. Find the square root of $\frac{i^{12}}{16j^{12}}$

(i) $\frac{i^{12}}{4j^{12}}$ (ii) $\frac{i^{6}}{4j^{12}}$ (iii) $\frac{i^{12}}{4j^{6}}$ (iv) $\frac{i^{24}}{4j^{24}}$ (v) $\frac{i^{6}}{4j^{6}}$

30. $\frac{m^{(-8)}}{3o^{(-7)}}$ =

(i) $\frac{o^{(-7)}}{3m^{(-8)}}$ (ii) $\frac{3o^{(-7)}}{m^{(-8)}}$ (iii) $\frac{o^{7}}{3m^{8}}$ (iv) $\frac{m^{7}}{3o^{8}}$ (v) $\frac{3o^{7}}{m^{8}}$

31. Which of the following statements are true?

a) $\frac{x^{m}}{x^{n}} = x^{\frac{m}{n}}$

b) $a^{m}.a^{n} = a^{mn}$

c) $a.x^{m} = a^{m}.x^{m}$

d) $\left(x^{m}\right)^{n} = x^{(m+n)}$

e) $\left(x^{m}\right)^{n} = \left(x^{n}\right)^{m}$

f) $a^{0} = 1 \ (a \neq 0)$

(i) {a,e} (ii) {a,f,e} (iii) {b,f} (iv) {c,d,e} (v) {e,f}

32. Simplify $\frac{\left(v^{(a+b)}\right)^{5}\left(v^{(b+c)}\right)^{5}\left(v^{(c+a)}\right)^{5}}{\left(v^{a}.v^{b}.v^{c}\right)}$

(i) $v^{(10a+10b+10c)}$ (ii) $v^{(9a+9b+9c)}$ (iii) $v^{(4a+4b+4c)}$ (iv) $v^{(5a+5b+5c)}$ (v) $v^{a}.v^{b}.v^{c}$

33. Simplify $\left(\frac{8^{c}.81^{(c-3)}.100^{(c-5)}}{64^{(c-3)}.9^{(c-5)}.10^{(c-4)}}\right)$

(i) $8^{3}.9^{2}.10^{(-1)}$ (ii) $8^{(-c+6)}.9^{(c-1)}.10^{(c-6)}$ (iii) $8^{(-c+6)}.9^{(-c+7)}.10^{(-c+3)}$

(iv) $8^{(c+3)}.9^{(-c+7)}.10^{(-c+3)}$

34. Find the square root of $f^{(6n+6)}.g^{6n}.h^{(6n-6)}$

(i) $f^{(n+3)}.g^{6n}.h^{(n-3)}$ (ii) $f^{(3n-3)}.g^{3n}.h^{(3n+3)}$ (iii) $f^{(3n+3)}.g^{3n}.h^{(3n-3)}$

(iv) $6f^{(n+1)}.6g^{n}.6h^{(n-1)}$

35. $\left(g^{(-6)} + h^{(-6)}\right)^{0} =$

(i) 0 (ii) 1 (iii) (-2) (iv) 4 (v) $g^{(-6)} + h^{(-6)}$

36. $\left(\frac{2}{3}abc\right) \times \left(-2b^{7}c^{8}\right) \times \left(-\frac{1}{3}c^{3}\right) =$

(i) $\frac{2}{27}c^{12}ab^{4}$ (ii) $-\frac{4}{3}ab^{8}c^{9}$ (iii) $\frac{4}{9}ab^{8}c^{12}$ (iv) $-\frac{2}{9}b^{10}c^{19}$ (v) $\frac{4}{9}ab^{11}c^{17}$

Assignment Key

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