

EduSahara™ Learning Center Assignment**Grade : Class VII, ICSE****Chapter : Exponents****Name : Base Power Expressions involving Variables****Licensed To : Teachers and Students for non-commercial use**

1. $8v^2 \cdot 2v^3 =$

(i) $16v^6$ (ii) $10v^6$ (iii) $10v^5$

(iv) $16v^5$ (v) $5v^{16}$

2. $8n^8 \cdot 2n^9 \cdot 3n^4 =$

(i) $13n^{21}$ (ii) $48n^{288}$ (iii) $13n^{288}$

(iv) $21n^{48}$ (v) $48n^{21}$

3. $3m^5 \cdot 9m^5 \cdot 8m^9 \cdot 2m^7 =$

(i) $19m^{54}$ (ii) $14m^{175}$ (iii) $432m^{26}$

(iv) $54m^{175}$ (v) $14m^{19}$

4. $-6p^7 \cdot -4p^5 =$

(i) $12p^{24}$ (ii) $24p^{35}$ (iii) $-10p^{12}$

(iv) $-10p^{35}$ (v) $24p^{12}$

5. $-9f^{(-2)} \cdot -8f^5 \cdot -4f^{(-8)} =$

(i) $-288f^{(-5)}$ (ii) $-21f^{(-5)}$ (iii) $-288f^{80}$

(iv) $-5f^{(-288)}$ (v) $-21f^{80}$

6. $-5j^5 \cdot -2j^{(-7)} \cdot -6j^7 \cdot -3j^7 =$

(i) $5j^{(-30)}$ (ii) $-10j^5$ (iii) $-10j^{(-245)}$

(iv) $-30j^{(-245)}$ (v) $180j^{12}$

7. Find the square root of $i^6 j^4 k^6 =$

(i) $i^3 j^2 k^3$ (ii) ijk^{144} (iii) ijk^{16}

(iv) $\frac{1}{i^6 j^4 k^6}$ (v) $(i^6 j^4 k^6)^2$

8. $3c^2 d^8 \cdot -3c^5 d^{-8} =$

(i) $6c^7$ (ii) $9c^7 d^{16}$ (iii) $-9c^2 d^8$

(iv) 0 (v) $-9c^7$

9. $(h^5)^2 =$

(i) h^5 (ii) $2h^5$ (iii) h^{-3} (iv) h^{10} (v) h^7

10. $\frac{n^{13}}{n^9} =$

(i) $9n^4$ (ii) n^{22} (iii) n^4 (iv) n^{117} (v) $13n^4$

11. $(k^4 l^5)^7 =$

(i) $7k^{11} l^{12}$ (ii) $k^{28} l^{35}$ (iii) $7k^4 l^5$

(iv) $k^{11} l^{12}$ (v) $7k^{28} l^{35}$

12. $(-5i^5 j^4)^3 =$

(i) $-125i^8 j^7$ (ii) $-15i^8 j^7$ (iii) $-125i^{15} j^{12}$

(iv) $-5i^{15} j^{12}$ (v) $-15i^{15} j^{12}$

13. $\left(\frac{b^{14}}{b^{10}}\right)^2 =$

(i) $2b^4$ (ii) $2b^{24}$ (iii) b^8 (iv) b^{48} (v) b^{280}

$$14. \left(\frac{t^5 u^3}{v^3} \right)^8 =$$

$$(i) \left(\frac{t^{13} u^{11}}{v^{24}} \right) \quad (ii) \left(\frac{8 t^5 u^3}{8 v^3} \right) \quad (iii) \left(\frac{t^{13} u^{11}}{v^{11}} \right)$$

$$(iv) \left(\frac{t^{40} u^{24}}{v^{24}} \right) \quad (v) \left(\frac{t^{40} u^{24}}{v^{11}} \right)$$

$$15. \frac{r^{15} s^{10}}{r^3 s^2} =$$

$$(i) r^{18} s^8 \quad (ii) r^{12} s^8 \quad (iii) r^{12} s^{12} \quad (iv) r^{18} s^{12} \quad (v) r^{25} s^5$$

$$16. \frac{r^4}{r^{16}} =$$

$$(i) \frac{1}{r^{64}} \quad (ii) \frac{1}{r^{20}} \quad (iii) \frac{1}{r^{(-12)}} \quad (iv) \frac{1}{r^{12}} \quad (v) r^{12}$$

$$17. (k^3)^{(l+5)} =$$

$$(i) k^{(l+18)} \quad (ii) k^{(3l+8)} \quad (iii) k^{(l+11)}$$

$$(iv) k^{(3l-15)} \quad (v) k^{(3l+15)}$$

$$18. \left(\frac{p^8}{q^5} \right)^r =$$

$$(i) \frac{q^{5r}}{p^{8r}} \quad (ii) \frac{p^{8r}}{q^{5r}} \quad (iii) p^{8r} \cdot -q^{5r} \quad (iv) p^{8r} \cdot q^{5r}$$

$$19. \left(\frac{j^{(-10o+2)}}{ } \right) =$$

$$j^{(6o+2)}$$

$$(i) j^{(21o^2-40o-37)} (ii) j^{(-10o-14)} (iii) j^{(-16o)}$$

$$(iv) j^{(-4o+4)} (v) j^{(-16o+1)}$$

$$20. \left(\frac{e^9}{e^7} \right)^6 =$$

$$(i) e^9 (ii) 6e^{12} (iii) e^{12}$$

$$(iv) e^{16} (v) e^7$$

$$21. \left(k^{14k} \right)^6 =$$

$$(i) k^{(14k+6)} (ii) k^{14k} (iii) 6k^{84k} (iv) k^{84k}$$

$$22. \left(t^{(-2)} \cdot u^3 \right)^2 =$$

$$(i) t^{(-4)} \cdot u (ii) t^{(-2)} \cdot u^6 (iii) t^{(-4)} \cdot u^3$$

$$(iv) t^{(-4)} \cdot u^6 (v) 1 \cdot u^5$$

$$23. \left((a^2)^{(-4)} \right)^{-2} =$$

$$(i) a^{(-10)} (ii) a^{(-4)} (iii) a^8 (iv) a^{16} (v) a^{(-6)}$$

$$24. \left(4d^3 \cdot 3e^{(-4)} \right)^{-3} =$$

$$(i) e^{12} \cdot 1728d^{(-9)} (ii) \frac{-12e^{12}}{-9d^{(-9)}} (iii) \frac{d^{12}}{1728e^{(-9)}} (iv) \frac{e^{12}}{1728d^9} (v) \frac{4e^{12}}{3d^{(-9)}}$$

$$25. (q-r)^4 \cdot (q-r)^7 =$$

$$(i) (q-r)^4 (ii) (q-r)^{(-3)} (iii) (q-r)^{28} (iv) (q-r)^7 (v) (q-r)^{11}$$

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

(i) $\frac{9}{16}$ (ii) $\frac{16b^{(-4)}}{9c^2}$ (iii) $\frac{16}{9}$ (iv) $\frac{16c^4}{9b^4}$ (v) $\frac{9b^{(-4)}}{16c^{(-4)}}$

27. $\frac{d^{(-10)}}{2i^{(-6)}} =$

(i) $\frac{i^6}{2d^{10}}$ (ii) $\frac{2i^6}{d^{10}}$ (iii) $\frac{i^{(-6)}}{2d^{(-10)}}$ (iv) $\frac{2i^{(-6)}}{d^{(-10)}}$ (v) $\frac{d^6}{2i^{10}}$

28. Which of the following statements are true?

a) $\left(x^m\right)^n = \left(x^n\right)^m$

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

c) $a^m \cdot a^n = a^{mn}$

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

e) $a \cdot x^m = a^m \cdot x^m$

f) $a^0 = 1 \quad (a \neq 0)$

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

29. Simplify $\left(\frac{3^n \cdot 16^{(n-2)} \cdot 25^{(n-4)}}{9^{(n-2)} \cdot 4^{(n-4)} \cdot 5^{(n-2)}}\right)$

(i) $3^{(-n+4)} \cdot 4^{(-n+6)} \cdot 5^{(-n)}$ (ii) $3^{(-n+4)} \cdot 4^n \cdot 5^{(n-6)}$

(iii) $3^{(n+2)} \cdot 4^{(-n+6)} \cdot 5^{(-n)}$ (iv) $3^2 \cdot 4^2 \cdot 5^{(-2)}$

30. $\left(h^{(-8)} + i^{(-8)} \right)^0 =$

- (i) 1 (ii) $h^{(-8)} + i^{(-8)}$ (iii) 0 (iv) (-1) (v) 4
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31. $\left(\frac{1}{9}ghi \right) \times \left(5h^6i^5 \right) \times \left(-\frac{2}{7}i^4 \right) =$

- (i) $-\frac{10}{63}gh^7i^{10}$ (ii) $\frac{20}{49}h^{10}i^{14}$
(iii) $\frac{5}{9}gh^7i^6$ (iv) $-\frac{10}{63}gh^{11}i^{11}$
(v) $\frac{4}{441}i^{10}gh^5$
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Assignment Key

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