EduSahara™ Learning Center Assignment

Grade : Class VIII, ICSE
Chapter : Exponents
Name : Base Power Expressions involving Variables
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1. $6\ s^{5} . 5\ s^{6} =$

   (i) $11\ s^{11}$ (ii) $30\ s^{30}$ (iii) $30\ s^{11}$

   (iv) $11\ s^{30}$

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2. $9\ p^{6} . 4\ p^{7} . 5\ p^{4} =$

   (i) $18\ p^{17}$ (ii) $180\ p^{17}$ (iii) $18\ p^{168}$

   (iv) $180\ p^{168}$ (v) $17\ p^{180}$

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3. $7\ i^{4} . 5\ i^{3} . 9\ i^{7} . 6\ i^{4} =$

   (i) $18\ i^{14}$ (ii) $18\ i^{48}$ (iii) $14\ i^{210}$

   (iv) $1890\ i^{18}$ (v) $210\ i^{48}$

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4. $-6\ c^{(-2)} . -9\ c^{(-9)} =$

   (i) $-15\ c^{18}$ (ii) $-11\ c^{54}$ (iii) $-15\ c^{(-11)}$

   (iv) $54\ c^{18}$ (v) $54\ c^{(-11)}$

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5. $-8\ e^{6} . -7\ e^{(-5)} . -2\ e^{(-7)} =$

   (i) $-17\ e^{210}$ (ii) $-17\ e^{(-6)}$ (iii) $-112\ e^{210}$

   (iv) $-6\ e^{(-112)}$ (v) $-112\ e^{(-6)}$

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6. $-7\ m^{5} . -3\ m^{(-4)} . -8\ m^{(-3)} . -9\ m^{5} =$

(i) $-189\ m^{(-100)}$ (ii) $-2\ m^{(-189)}$ (iii) $-19\ m^{(-100)}$

(iv) $1512\ m^{3}$ (v) $-19\ m^{(-2)}$

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7. Find the square root of $p^4q^2r^4$ =

(i) pqr^{32} (ii) $\frac{1}{p^4q^2r^4}$ (iii) $(p^4q^2r^4)^{2}$

(iv) pqr^{10} (v) p^2qr^2

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8. $5\ p^{(-3)}\ q^{(-2)} .\ -5\ p^{(-8)}\ q^{(-8)}$ =

(i) $-25\ p^{(-3)}\ q^{(-2)}$ (ii) $-25\ p^{(-11)}\ q^{(-10)}$ (iii) $10\ p^{(-11)}\ q^{(-10)}$

(iv) $25\ p^{(-11)}\ q^{6}$ (v) 0

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9. $(q^5)^{7}$ =

(i) q^{2} (ii) $7\ q^{5}$ (iii) q^{12} (iv) q^{5} (v) q^{35}

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10. $\frac{u^{12}}{u^{8}}$ =

(i) $12\ u^{4}$ (ii) u^{20} (iii) $8\ u^{4}$ (iv) u^{4} (v) u^{96}

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11. $(h^5i^6)^{2}$ =

(i) $2\ h^{5}\ i^{6}$ (ii) $2\ h^{10}\ i^{12}$ (iii) $2\ h^{7}\ i^{8}$

(iv) $h^{10}\ i^{12}$ (v) $h^{7}\ i^{8}$

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12. $(-5w^4x^5)^{4}$ =

(i) $-20\ w^{8}\ x^{9}$ (ii) $-5\ w^{16}\ x^{20}$ (iii) $-20\ w^{16}\ x^{20}$

(iv) $625\ w^{16}\ x^{20}$ (v) $625\ w^{8}\ x^{9}$

13. $\left(\frac{v^{12}}{v^{4}}\right)^{4}$ =

(i) v^{192} (ii) v^{32} (iii) v^{64} (iv) $4\ v^{8}$ (v) $4\ v^{16}$

14. $\left(\frac{p^{4}\ q^{2}}{r^{2}}\right)^{5}$ =

(i) $\left(\frac{5\ p^{4}\ q^{2}}{5\ r^{2}}\right)$ (ii) $\left(\frac{p^{20}\ q^{10}}{r^{10}}\right)$ (iii) $\left(\frac{p^{9}\ q^{7}}{r^{7}}\right)$

(iv) $\left(\frac{p^{20}\ q^{10}}{r^{7}}\right)$ (v) $\left(\frac{p^{9}\ q^{7}}{r^{10}}\right)$

15. $\frac{f^{18}\ g^{20}}{f^{8}\ g^{3}}$ =

(i) $f^{26}\ g^{17}$ (ii) $f^{10}\ g^{17}$ (iii) $f^{26}\ g^{23}$ (iv) $f^{10}\ g^{23}$ (v) $f^{38}\ g^{11}$

16. $\frac{t^{5}}{t^{10}}$ =

(i) $\frac{1}{t^{(-5)}}$ (ii) t^{5} (iii) $\frac{1}{t^{50}}$ (iv) $\frac{1}{t^{15}}$ (v) $\frac{1}{t^{5}}$

17. $(d^{3})^{(e+3)}$ =

(i) $d^{(e+12)}$ (ii) $d^{(3e-9)}$ (iii) $d^{(3e+9)}$

(iv) $d^{(3e+6)}$ (v) $d^{(e+9)}$

18. $\left(\frac{s^{2}}{t^{9}}\right)^{y}$ =

(i) $s^{2y} . -t^{9y}$ (ii) $s^{2y} . t^{9y}$ (iii) $\frac{s^{2y}}{t^{9y}}$ (iv) $\frac{t^{9y}}{s^{2y}}$

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19. $\left(\frac{n^{(2p+5)}}{n^{(-2p-6)}}\right)$ =

(i) $n^{(p^2+7p+6)}$ (ii) $n^{(4p+12)}$ (iii) $n^{(2p+1)}$

(iv) $n^{(4p+11)}$ (v) $n^{(-1)}$

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20. $\left(\frac{j^{10}}{j^{4}}\right)^{4}$ =

(i) j^{14} (ii) j^{4} (iii) j^{24}

(iv) j^{10} (v) $4\ j^{24}$

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21. $\left(q^{21q}\right)^{9}$ =

(i) $q^{(21q+9)}$ (ii) q^{189q} (iii) $9\ q^{189q}$ (iv) q^{21q}

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22. $\left(m^{(-3)} . n^{(-2)}\right)^{3}$ =

(i) $m^{(-9)} . n^{(-6)}$ (ii) $m^{(-9)} . n^{(-4)}$ (iii) $m^{(-6)} . n^{(-6)}$

(iv) $m^{(-6)} . n^{(-5)}$ (v) $1 . n$

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23. $\left((v^{4})^{(-5)}\right)^{-6}$ =

(i) $v^{(-7)}$ (ii) v^{15} (iii) $v^{(-14)}$ (iv) $v^{(-26)}$ (v) v^{120}

24. $\left(2c . 2\ d^{(-4)} \right)^{-2} =$

(i) $\frac{2\ d^{8}}{2\ c^{(-2)}}$ (ii) $d^{8} . 16\ c^{(-2)}$ (iii) $\frac{-4\ d^{8}}{-4\ c^{(-2)}}$ (iv) $\frac{c^{8}}{16\ d^{(-2)}}$ (v) $\frac{d^{8}}{16\ c^{2}}$

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25. $(p+q)^{(-9)} . (p+q)^{(-6)} =$

(i) $(p+q)^{(-9)}$ (ii) $(p+q)^{(-6)}$ (iii) $(p+q)^{(-15)}$ (iv) $(p+q)^{54}$ (v) $(p+q)^{(-3)}$

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26. $\left(\frac{2\ s^{3}}{2\ t^{5}} \right)^{-3} =$

(i) $\frac{8\ s^{(-9)}}{8\ t^{5}}$ (ii) $\frac{8\ t^{15}}{8\ s^{9}}$ (iii) $\frac{8\ s^{(-9)}}{8\ t^{(-15)}}$ (iv) $\frac{8}{8\ t^{2}}$

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27. $\sqrt{\frac{9\ p^{4}}{16\ q^{2}}} =$

(i) $\frac{4\ p^{2}}{3q}$ (ii) $\frac{3q}{4\ p^{2}}$ (iii) $\frac{3\ p^{4}}{4\ q^{2}}$ (iv) $\frac{3\ p^{2}}{4q}$ (v) $\frac{3\ p^{8}}{4\ q^{4}}$

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28. Find the square root of $\frac{25\ n^{14}\ o^{8}}{144\ p^{10}}$

(i) $\frac{5\ n^{14}\ o^{4}}{12\ p^{5}}$ (ii) $\frac{5\ n^{7}\ o^{4}}{12\ p^{5}}$ (iii) $\frac{5\ n^{7}\ o^{4}}{12\ p^{10}}$ (iv) $\frac{5\ n^{14}\ o^{8}}{12\ p^{10}}$ (v) $\frac{5\ n^{7}\ o^{8}}{12\ p^{5}}$

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29. Find the square root of $\frac{25\ j^{4}}{64\ k^{12}}$

(i) $\frac{5\ j^{8}}{8\ k^{24}}$ (ii) $\frac{5\ j^{2}}{8\ k^{12}}$ (iii) $\frac{5\ j^{4}}{8\ k^{6}}$ (iv) $\frac{5\ j^{2}}{8\ k^{6}}$ (v) $\frac{5\ j^{4}}{8\ k^{12}}$

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30. $\frac{2\ j^{(-2)}}{5\ k^{(-5)}}$ =

(i) $\frac{2\ j^{5}}{5\ k^{2}}$ (ii) $\frac{2\ k^{5}}{5\ j^{2}}$ (iii) $\frac{2\ k^{(-5)}}{5\ j^{(-2)}}$ (iv) $\frac{5\ k^{5}}{2\ j^{2}}$ (v) $\frac{5\ k^{(-5)}}{2\ j^{(-2)}}$

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31. Which of the following statements are true?

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

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

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

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

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

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

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

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32. Simplify $\frac{\left(t^{(m+n)} \right)^{6} \left(t^{(n+o)} \right)^{6} \left(t^{(o+m)} \right)^{6}}{\left(t^{m}\ .\ t^{n}\ .\ t^{o} \right)}$

(i) $t^{(11m+11n+11o)}$ (ii) $t^{(5m+5n+5o)}$ (iii) $t^{(12m+12n+12o)}$

(iv) $t^{m}\ .\ t^{n}\ .\ t^{o}$ (v) $t^{(6m+6n+6o)}$

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33. Simplify $\left(\frac{7^{p} \cdot 64^{(p-4)} \cdot 81^{(p-2)}}{49^{(p-4)} \cdot 8^{(p-2)} \cdot 9^{(p-5)}}\right)$

(i) $7^{(-p+8)} \cdot 8^{(p-6)} \cdot 9^{(p+1)}$ (ii) $7^{4} \cdot 8^{(-2)} \cdot 9^{3}$

(iii) $7^{(p+4)} \cdot 8^{(-p)} \cdot 9^{(-p+8)}$ (iv) $7^{(-p+8)} \cdot 8^{(-p)} \cdot 9^{(-p+8)}$

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34. Find the square root of $d^{(4u+4)} \cdot e^{4u} \cdot f^{(4u-4)}$

(i) $4\, d^{(u+1)} . 4\, e^{u} . 4\, f^{(u-1)}$ (ii) $d^{(2u+2)} \cdot e^{2u} \cdot f^{(2u-2)}$

(iii) $d^{(u+2)} \cdot e^{4u} \cdot f^{(u-2)}$ (iv) $d^{(2u-2)} \cdot e^{2u} \cdot f^{(2u+2)}$

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35. $\left(f^{5} + g^{5}\right)^{0} =$

(i) (-2) (ii) $f^{5} + g^{5}$ (iii) 0 (iv) 1 (v) 4

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36. $\left(\frac{6}{7}nop\right) \times \left(6\, o^{10} p^{5}\right) \times \left(-\frac{9}{4} p^{6}\right) =$

(i) $-\frac{81}{7} n\, o^{11} p^{12}$ (ii) $-\frac{81}{7} n\, o^{17} p^{11}$

(iii) $\frac{36}{7} n\, o^{11} p^{6}$ (iv) $\frac{243}{8}\, o^{16} p^{16}$

(v) $\frac{243}{56}\, p^{12} n\, o^{7}$

Assignment Key

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