Level 0: The Basics

You may move on to the next level once a checker has made sure you got a 100%.

Multiplying Powers | **Dividing Powers** | **Power to a Power** | **Zero Exponents** | **Negative Exponents**

1) $x^3 \cdot x^7$ 2) $\frac{x^9}{x^3}$ 3) $(a^5)^2$ 4) 10^0 5) n^{-3}

$\boxed{x^{10}}$ $\boxed{x^6}$ $\boxed{a^{10}}$ $\boxed{1}$ $\boxed{\frac{1}{n^3}}$

Level 1: 2 Properties in 1

You may move on to the next level once a checker has made sure you got a 100%.

1) $(x^4 \cdot x^2)^3$ 2) $\left(\frac{2^7}{2^4}\right)^5$ 3) $\frac{f^9 f^3}{f^5}$ 4) $\left(\frac{k}{k^5}\right)^2$ $(k^{-4})^2$ 5) $\frac{x^{-6}}{x^5}$ $-6-5=-11$

$(x^6)^3$ $(2^3)^5$ $\frac{f^{12}}{f^5}$ $\frac{k^{2a}}{k^{10}}$ x^{-11}

$\boxed{x^{18}}$ $\boxed{2^{15}}$ $\boxed{f^7}$ $\downarrow$ $\downarrow$

                                            $\boxed{\frac{1}{k^8}}$ $\boxed{\frac{1}{x^{11}}}$

Level 2: With coefficients

You may move on to the next level once a checker has made sure you got a 100%.
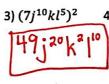
1) $3d^4 \cdot 2d^5$ 2) $\frac{12c^9}{3c^4}$ 3) $(5b^3)^2$ 4) $5x^0$ 5) $6k^{-3}$ 6) $(3m^2)^3$ $3m^2 \cdot 3m^2 \cdot 3m^2$ 7) $\left(\frac{f^4}{2}\right)^4$

$\boxed{6d^9}$ $\boxed{4c^5}$ $(5b^3)(5b^3)$ $\boxed{25b^6}$ $\boxed{5}$ $6 \cdot \frac{1}{k^3}$ $\boxed{27m^6}$ $\frac{f^4}{2} \cdot \frac{f^4}{2} \cdot \frac{f^4}{2} \cdot \frac{f^4}{2}$

                                                    $\boxed{\frac{6}{k^3}}$ $\boxed{\frac{f^{16}}{16}}$

Level 3: Multiple Variables

You may move on to the next level once the teacher has made sure you got a 100%.

1) $-4w^4v \cdot -3w^5v^2$ 2) $\frac{8y^9z^4}{8y^4z^6}$ 3) $(7j^{10}kl^5)^2$ 4) $\left(\frac{f^0}{3g}\right)^3$ 5) $\frac{8a^3b^{-4}}{2a^{-4}b}$

$\boxed{12w^9v^3}$ $\boxed{\frac{y^5}{z^2}}$ $\boxed{49j^{20}k^2l^{10}}$ $\frac{f^0}{27g^3}$ $\frac{8a^3 \cdot a^2}{2b^4 \cdot b^1}$

                                                             $\boxed{\frac{1}{27g^3}}$ $\boxed{\frac{4a^5}{b^5}}$

Level 4: Harder

You may move on to the next level once a checker has made sure you got a 100%.

1) $3mn^{-2} \cdot 6m^{-4}n^5 \cdot \frac{1}{2}m^0n$ 2) $\frac{35p^9q^{-3}}{30p^2q^0q^3}$ 3) $\left(\frac{2r^4r^{-3}s}{6rs^6}\right)^3$

$3 \cdot 6 \cdot \frac{1}{2} \cdot m^1 \cdot m^{-4} \cdot m^0 \cdot n^{-2} \cdot n^5 \cdot n^1$ $\frac{7 \cdot 35p^9}{6 \cdot 30p^2q^3 \cdot q^3}$ $\left(\frac{2r^1s^1}{6rs^6}\right)^3 \rightarrow \left(\frac{1}{3s^5}\right)^3$

$9m^{-3}n^4$ $\boxed{\frac{7p^7}{6q^6}}$ $\boxed{\text{This is an exponent}}$ $\boxed{\frac{1}{27s^{15}}}$

$\boxed{\frac{9n^4}{m^3}}$

Level 5: At Your Own Risk!

You may start on the homework once you have gotten the correct answer.

$\left(\frac{-9 \cdot 2 \cdot -4 \cdot x^5 \cdot x^{-3} \cdot x^1 \cdot y^4 \cdot y^0 \cdot z^1 \cdot 2 \cdot x^8}{3 \cdot -6 \cdot 3 \cdot w^{30} \cdot x^{12} \cdot y^8 \cdot y^{-5} \cdot z^{-9} \cdot z^5}\right)^3$ $\left(\frac{-9x^5y^4 \cdot 2x^{-3}z^1 \cdot -4xy^0 \cdot x^8}{3x^{12}y^8 \cdot -6w^{30}z^{-9} \cdot 3y^{-5}z^5}\right)^{3 \cdot \frac{1}{4}}$ $\left(\frac{w^{100}}{(2xyz^2)^3}\right) \rightarrow \left(\frac{w^{100}}{8x^3y^3z^6}\right)$ $\boxed{\frac{-64w^{10}z^9}{27x^{24}}}$

$\left(\frac{-18 \cdot -8 \cdot x^5 \cdot y^4 \cdot z^1}{-18 \cdot 3w^{30} \cdot x^{12} \cdot y^3 \cdot z^{-4}}\right)^3 \rightarrow \left(\frac{-8yz^5}{3w^{30}x^7}\right)^3 \rightarrow \left(\frac{-512y^3z^{15}}{27w^{90}x^{21}}\right)\left(\frac{w^{100}}{8x^3y^3z^6}\right) \rightarrow \frac{-512w^{100}y^3z^{15}}{27 \cdot 8w^{90}x^{24}y^3z^6}$