Principles of Algebra Name/Date Clee / Today

ALL PROBLEMS CAN BE COMPLETED ON THIS WORKSHEET

WS 10C.1 – Dividing Powers with Like Bases / Fractions to Powers

#1-9, Simplify.

1. $\frac{-r^{10}}{-7r^{9}} = \frac{r}{7}$

2. $\left(\frac{4x}{n^{8}}\right)^{3} = \frac{(4x)^{3}}{(n^{8})^{3}} = \frac{64x^{3}}{n^{24}}$

3. $\left(\frac{-21a^{5}b^{12}}{14a^{2}b}\right)^{2} = \left(\frac{-3a^{3}b^{11}}{2}\right)^{2} = \frac{(-3a^{3}b^{11})^{2}}{(2)^{2}} = \frac{9a^{6}b^{22}}{4}$

4. $\left[\frac{m^{7}n^{5}}{(mn)^{3}}\right]^{4} = \left[\frac{m^{7}n^{5}}{m^{3}n^{3}}\right]^{4} = (m^{4}n^{2})^{4} = m^{16}n^{8}$

5. $\left(\frac{16x^{4}y^{7}}{-4x^{2}y^{3}}\right)^{4} = (-4x^{2}y^{4})^{4} = 256x^{8}y^{16}$

6. $\left(\frac{-12h^{15}j^{20}k^{25}}{20h^{10}j^{10}k}\right)^{3} = \left(\frac{-3h^{5}j^{10}k^{24}}{5}\right)^{3} = \frac{(-3h^{5}j^{10}k^{24})^{3}}{(5)^{3}} = \frac{-27h^{15}j^{30}k^{72}}{125}$

7. $\left(\frac{11p^{q}}{g^{q}}\right)^{d} = \frac{11^{d}p^{qd}}{g^{qd}}$

8. $\left(\frac{h^{10}p^{9}}{k^{r}}\right)^{r} = \frac{h^{10r}p^{9r}}{k^{r^{2}}}$

9. $\left(\frac{144d^{8}(e^{4}f)^{2}}{48d^{3}e^{6}f}\right)\left(\frac{36d^{10}e^{11}f^{9}}{12d^{4}ef^{5}}\right)^{2} = \left(\frac{144d^{8}e^{8}f^{2}}{48d^{3}e^{6}f}\right)\left(\frac{36d^{10}e^{11}f^{9}}{12d^{4}ef^{5}}\right)^{2} = (3d^{5}e^{2}f)(3d^{6}e^{10}f^{4})^{2} = (3d^{5}e^{2}f)(9d^{12}e^{20}f^{8}) = 27d^{17}e^{22}f^{9}$