Algebra 2 // Topic 5 Practice A

1) 8^{-6}

$\boxed{\frac{1}{8^6}}$

2) $(-7)^{-10}$

$\frac{1}{(-7)^{10}} = \boxed{\frac{1}{7^{10}}}$

what happens to "-"? Any -# to an even power will always be "+". If it were an odd power then it would be "-".

3) -3^{-5}

$\frac{-1}{3^5} = \boxed{\frac{-1}{243}}$

4) $x^{-4} \cdot x^{12} \cdot x^{-6}$

$\boxed{x^2}$

There is a major difference between #2 and #3 and its all about the parantheses! #2 has them so the exponent effects everything inside. In #3, the exponent does not effect the "-".

5) $(k^9 f^2)(k^{-9} f^4)$

$= k^0 f^6 = \boxed{f^6}$

6) $x^4 \cdot 2x^{-7}$

$= 2x^{-3} = \boxed{\frac{2}{x^3}}$

7) $(2a^5)(-3a^2b^{-4})(-7ab^3)$

$= 42a^8 b^{-1} = \boxed{\frac{42a^8}{b}}$

PEMDAS

8) $(3x^3y^5)(8x^{-2}y^9)$

$= 24x^1y^{14} = \boxed{24xy^{14}}$

9) $(p^2)^{-10}$

$= p^{-20} = \boxed{\frac{1}{p^{20}}}$

10) $(a^5b^3)^6(a^{-8}b^2)^5$

$= (a^{30}b^{18})(a^{-40}b^{10})$

$= a^{-10}b^{28} = \boxed{\frac{b^{28}}{a^{10}}}$

11) $(z^3)^{-5}(z^2)^7$

$= (z^{-15})(z^{14})$

$= z^{-1} = \boxed{\frac{1}{z}}$

12) $(3^{-5})^6$

$= 3^{-30}$

$= \boxed{\frac{1}{3^{30}}}$

13) $(5^3g^5)^4$

$= \boxed{5^{12}g^{20}}$

14) $(4^{-7}v^3)^7$

$= 4^{-49}v^{21}$

$= \boxed{\frac{v^{21}}{4^{49}}}$

15) $(8x^7)^5(9x^{-2})^9$

$= (8^5x^{35})(9^9x^{-18})$

$= \boxed{8^5 9^9 x^{17}}$

16) $(4^2y^2)^{-3}$

$= 4^{-6}y^{-6}$

$= \boxed{\frac{1}{4^6y^6}}$

17) $\frac{3^7w^3x^5}{3^9w^7x^2}$

$= \frac{x^3}{3^2w^4} = \boxed{\frac{x^3}{9w^4}}$

18) $\frac{y^{17}a^{10}}{y^{12}z^{19}}$

$= \boxed{\frac{a^{10}y^5}{z^{19}}}$

19) $\left(\frac{6^{11}}{7^8}\right)^{-5}$

$= \frac{6^{-55}}{7^{-40}} = \boxed{\frac{7^{40}}{6^{55}}}$

20) $\left(\frac{x^{13}}{y^9}\right)^9$

$= \boxed{\frac{x^{117}}{y^{81}}}$

↑ Take your time. Make sure there are no negative exponents in your answers. You do not need to multiply super large exponents, like 7^{40}... Use PEMDAS and your exponent rules.