

7-3 More Multiplication Properties of Exponents

Simplify each expression completely. Leave your answer in fraction form, if necessary. (1 pt each)

1. $(a^2)^6 = \boxed{a^{12}}$

2. $(a^{-2})^3 = a^{-6}$
 $= \boxed{\frac{1}{a^6}}$

3. $(x^{-3})^{-4} = \boxed{x^{12}}$

4. $(2a^{-7})^3$
 $= 2^3 \cdot a^{-21}$
 $= \boxed{\frac{8}{a^{21}}}$

5. $(6x^{-4})^{-2}$
 $= 6^{-2} x^8$
 $= \boxed{\frac{x^8}{36}}$

6. $(n^3)^3(2n^{-1})^{-4}$
 $= n^9 \cdot 2^{-4} n^4$
 $= \boxed{\frac{n^{13}}{16}}$

7. Simplify each expression. Write your answer in scientific notation.

a. $(4 \times 10^5)^4$
 $= 4^4 \times 10^{20}$
 $= 256 \times 10^{20}$
 $= \boxed{2.56 \times 10^{22}}$

(2)

b. $(4 \times 10^{-5})^6$
 $= 4^6 \times 10^{-30}$
 $= 4096 \times 10^{-30}$
 $= \boxed{4.096 \times 10^{-27}}$

(2)