

### Algebra L4-5 Practice

Simplify. Leave all answer with positive exponents.

1.  $4^{-3} \cdot 4^5$

$$\boxed{4^2 = 16}$$

2.  $\frac{k^{-2}}{k^{-3}}$

$$\frac{k^3}{k^2} = \boxed{k}$$

3.  $\left(\frac{x^8}{y^4}\right)^{-5}$

$$\frac{x^{-40}}{y^{-20}} = \boxed{\frac{y^{20}}{x^{40}}}$$

4.  $\left(\frac{5b^{-3}}{b^4}\right)^2$

$$\frac{5^2 b^{-6}}{b^8} = \frac{25}{b^6 b^8}$$

$$= \boxed{\frac{25}{b^{14}}}$$

5.  $\left(\frac{x^{-4}y^5}{x^{-4}y^0}\right)^{-3}$

$$\frac{x^{12} y^{-15}}{x^{12} y^0} = y^{-15}$$

$$= \boxed{\frac{1}{y^{15}}}$$

6.  $\left(\frac{14a^4c^{-2}}{36a^{-4}c^6}\right)^2$

$$\frac{7^2 a^8 c^{-4}}{3^2 a^{-8} c^{12}} = \frac{49 a^8 a^8}{9 c^4 c^{12}}$$

$$= \boxed{\frac{49 a^{16}}{9 c^{16}}}$$

Simplify each radical expressions as much as possible.

7.  $\sqrt{80p^3}$   
16 · 5

$$\boxed{4p\sqrt{5p}}$$

8.  $\sqrt{147m^4n^3}$   
49 · 3

$$\boxed{7m^2n\sqrt{3n}}$$

9.  $\sqrt[3]{-64v^2w^6}$

$$-4w^2 \cdot \sqrt[3]{v^2}$$

10.  $\sqrt[3]{16a^5b^7}$   
8 · 2

$$\boxed{2ab^2 \cdot \sqrt[3]{2a^2b}}$$