

Name: ANSWER KEY

Score: _____

Simplify: $(4a^2b)^4 \left(\frac{-a^3}{2b} \right)^2$

$$= (4^4 (a^2)^4 b^4) \left(\frac{(-1)a^3}{(2b)^2} \right) \quad (4)(5)$$

$$= 256 a^8 b^4 \left(\frac{(-1)^2 (a^3)^2}{2^2 b^2} \right) \quad (2)(4)$$

$$= 256 a^8 b^4 \cdot \frac{a^6}{4 b^2} \quad (2)$$

$$= \frac{256 a^{14} b^4}{4 b^2} \quad (1)$$

$$= 64 a^{14} b^2 \quad (3)$$

$$(1) a^m \cdot a^n = a^{m+n}$$

$$(2) (a^m)^n = a^{mn}$$

$$(3) \frac{a^m}{a^n} = a^{m-n} \quad (a \neq 0)$$

$$(4) (ab)^n = a^n b^n$$

$$(5) \left(\frac{a}{b} \right)^n = \frac{a^n}{b^n} \quad (b \neq 0)$$

$$(6) a^0 = 1 \quad (a \neq 0)$$

$$(7) a^{-n} = \frac{1}{a^n} \quad (a \neq 0)$$