Algebra Workshop
Homework 8

Name:_____

1. Simplify:

(a) $xy^3x^2y^4$

(b) $x\left(x^3y^4\right)^2$

(c) $\dfrac{x^5y^3}{x^3y^2}$

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

(e) $\dfrac{x^7y^5}{\left(x^2y\right)^3}$

(f) $\dfrac{x^{3/4}}{x^{1/2}}$

(g) $\dfrac{\sqrt{x^6y^4}}{xy}$

(h) $\dfrac{x^2y^3}{xy^{-2}}$

2. Evaluate the following:

   (a) $2^3 \cdot 2^2$

   (b) $3^4 \cdot 3^{-2}$

   (c) 2^{-3}

   (d) 4^0

   (e) $\sqrt[3]{27}$

   (f) $9^{3/2}$

3. Express the following numbers in scientific notation, rounded to three digits:

   (a) 34,000

   (b) 0.781

   (c) 41,250 million

   (d) 0.0000358

   (e) 0.00842

   (f) 17,125,000

4. Compute the following. Express the answer in scientific notation, rounded to three digits.

(a) $(-2.81 \times 10^5) \times (3.52 \times 10^2)$

(b) $(5.84 \times 10^{-2}) \times (6.31 \times 10^{-8})$

(c) $\dfrac{6.84 \times 10^8}{3.17 \times 10^3}$

(d) $\dfrac{2.3 \times 10^3}{5.1 \times 10^{-2}}$

(e) $(2.12 \times 10^4)^3$

(f) $(9.82 \times 10^6)^{-2}$

(g) $\dfrac{12,000 \times 8,460}{1,350 \times .00005}$

(h) $\dfrac{45,000 \times 0.00023}{0.003 \times 0.002}$