MATH 9	**Unit 2: Powers and Exponents Review Quiz**	**Name:**	**%**

1. Write the following expressions in exponential form and then evaluate the power.

a. $4\times4\times4\times4\times4\times4$

b. $9\times9\times9$

c. $2\times2\times2\times2\times2\times2\times2$

d. $8\times8\times8\times8$

2. Write each expression as a single power. Then evaluate each power.

a. $2^2 \bullet 2^4$

b. $3^7 \bullet 3^{-4}$

c. $5^8 \div 5^4$

d. $4^4 \div 4^2$

e. $\dfrac{3^5 \bullet 3^4}{3^2}$

f. $\dfrac{4^6 \bullet 4^2}{4^3 \bullet 4^5}$

g. $\dfrac{9^{10}}{9^4 \bullet 9^2}$

h. $\dfrac{5^2 \bullet 5^8 \bullet 5^4}{5^2 \bullet 5^8}$

3. Evaluate each power.

a. -4^4

b. $(-2)^6$

4. Find the value of each expression. Show all of your work.

a. $\left(2^3\right)^2$

b. $4^3 \bullet 4^5$

c. $\left(-4n\right)^4$

d. $4^3 + 4^4$

e. $8^8 \div 8^4$

f. $5\left(8^2 - 3^2\right) + 3\left(3^3 - 2^3\right)$

g. $\dfrac{4^3 - 2^4}{2(4^2 - 10)}$

h. $\left(\dfrac{5^4 - 5^3}{10^2}\right)^2 - 5^2$

i. $64 - \left(4^3 - 3^4 \times 3\right)$

j. $\left(\dfrac{5^9 + 5^3}{2^8 - 4^5}\right)^0$

5. There are currently 100 ants in your backyard. Every month, their population triples in size. How many ants will there be after one year?

6. Two squares have side lengths of 4 cm and 6 cm, respectively. Calculate the difference in their areas.