Powers Worksheet #1

1) Explain the difference between $(-5)^2$ and -5^2.

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2) Compare: $3 \cdot 2$, 3^2, and 2^3.

3) Compare 10^2 and 2^{10}. For any two numbers, make a conjecture about which usually gives the greater number, using the greater number as the base or as the exponent?

4) Write in exponential form:

    a. $(-9)(-9)(-9)$ b. $3d \cdot 3d \cdot 3d$ c. $-8(-8)$

    d. $(-4)(-4) \cdot c \cdot c \cdot c$ e. $xxxxy$

5) Simplify:

    a. 4^3 b. $(-3)^4$ c. $\left(\frac{1}{6}\right)^2$

    d. -2^5 e. $\left(\frac{1}{2}\right)^3$

6) Evaluate each expression for the given values of the variables.
   a. b^2 for b = -7

   b. $2^c + 3d(g + 2)$ for c = 7, d = 5, and g = 1

   c. $m + n^p$ for m = 12, n = 11, and p = 2

   d. x/y^z for x = 9, y = 3, and z = 2

7) A circle can be divided by "n" lines into a maximum of $\frac{1}{2}(n^2 + n) + 1$ regions. Use the expression to find the maximum number of regions for 7 lines.