Math Review

logarithm: another word for index or power.
This is the "power" to which the "base" must be raised to get the number n i.e., $a^b = n$ can be expressed as $\log_a n = b$.

1. Express in logarithmic form, e.g. $2^3 = 8$, gives $\log_2 8 = 3$:
    a. $5^3 = 125$
    b. $7^2 = 49$

2. Find the logarithm, e.g. $\log_2 8 = 3$:
    a. $\log_4 64$
    b. $10^{\log 10}$
    c. $\log_a a^5$
    d. $\log_2 2^3$

3. Given a radius r = 1.5 units, h = 2 units

    a. Calculate the volume of a cylinder $V = \pi r^2 h$

    b. Calculate the volume of a sphere $V = 4/3\pi r^3$

4. Simplify the following expressions:
    a. $a^3 \times a^2 =$
    b. $a^7 / a^3 =$
    c. $a^3 / a^3 =$
    d. $(a^3)^2 =$

5. Given $f(x) = x^2$ and $g(x) = 5x$:
    a. Find f(f(f(x))
    b. Find g(g(g(x))
    c. Find f(g(f(x))