Homework Assignment

1. Suppose $x > 10$. Identify a value of $x^{.01}$ that exceeds $lnx$.
2. Is $(x^2 + 7x + 5)^3 \sim x^6$?
3. Is $(\sqrt{x} + 2)^3/(x^2 + 1) = o(1)$?
4. Is $e^{1/x} = \Theta(1)$?
5. Is $1/x \sim 0$?
6. Is $sin(x) = O(1)$?
7. Is $sin(x) = \Omega(1)$?
8. Determine which are transitive among $O, \Omega, \Theta, o$ and $\sim$.

See, for example: Wilf, *Algorithms and Complexity*, Prentice Hall, 1986.