Homework 7

1. (Mad Hatter 11-12 2005) How many real solutions are there to the equation $\sqrt{x^2 + 1} + \sqrt{x} = 1$? (Find all solutions.)

2. (Mad Hatter 11-12 2006) Solve for x: $\log_2 x + \log_3 x = 3 + \log_2 3 + \log_3 4$.

3. (Mad Hatter 11-12 2003) Solve for x: $\sqrt{x^2 - x - 12} < x$.

4. (Mad Hatter 11-12 2003) Solve for x: $\log_{x^2 - 3} 729 > 3$.