

July 24, 2003

Show all work for credit.

Leave all answers as exact answers unless otherwise stated.

1. Tell me everything interesting about  $f(x) = \frac{4(x+6)^2(x^2-4)}{3x(x+2)(x-7)}$
2. At the start of the week, my desk has 15lb. of stuff on it. 7 days later, my desk has 25lb. of stuff on it. Assuming that the stuff is breeding at an exponential rate, how much stuff will be on my desk at the end of the term? (Assume that right now my desk has 25lb. of stuff on it, and the term will be over in 14 days.)
3. (Bonus) Give the equation of a function that has roots at 3, 5, and 4; a hole at 6; vertical asymptotes at 2 and  $-7$ ; and an EBM of  $\frac{5}{7x}$