Math 105 Quiz #8 November 18, 2013

• This is a closed-book quiz. No books, notes, calculators, cell phones, communication devices of any sort, or webpages, or other aids are permitted.

• Please *show* all of your work and *justify* all of your answers.

1. [5 Points]   Find the critical numbers for $f(x) = \dfrac{x^2 + 12}{x + 4}$.

2. [5 Points]   Find the critical numbers for $f(x) = x\sqrt{x + 4}$.

3. [5 Points]   Find the critical numbers for $f(x) = x^{\frac{4}{3}} - 4x^{\frac{1}{3}}$.

4. [5 Points]   Find the absolute maximum and absolute minimum value(s) of the function

$$G(x) = (x-1)^2(x-9)^2 \text{ on the interval } [0,8].$$