Math 190 – Spring 2017 Names:_____

Assignment: G10

Give the details of each characteristic for the following functions in problems (1) – (3)

a. Domain of the function
b. *x*- and *y*-intercepts
c. Symmetry
d. End behavior (limits at ±∞) including horizontal or slant asymptotes
e. Vertical Asymptotes
f. Differentiability
g. Intervals of increase and decrease
h. Local maximums and local minimums
i. Intervals of upward or downward concavity
j. Inflection points

(1) $f(x) = \frac{2(x^2-9)}{x^2-4}$

(2) $f(x) = \frac{x}{\sqrt{x^2+2}}$

(3) $f(x) = \frac{2x^3}{x^2+1}$

(4) Find two positive numbers such that the second is the reciprocal of the first and the sum is minimized.

(5) A box is to be made with a square base and no top. It must be made to hold 16 cubic inches of sand. Find the dimensions of the box of least surface area.