(1) For the total revenue function $R(x) = \frac{400x}{x + 5}$, find the marginal revenue function and the marginal revenue of the seventeenth unit.

(2) (Webworks) For the cost function $C(x) = 1000 + 50x + 4x^4$, find the production level that will minimize the average cost.
(3) (Problem taken from “How to Ace Calculus”) You have just invented a new peanut butter guacamole dip, and you open a stand in front of the student union to sell this goop by the jar. Somehow a rumor gets started, certainly not traceable back to you, that it is an aphrodisiac, and sales take off. At a price of $1.00 a jar, you sell 500 jars a day. For each nickel that you increase the price, you sell two fewer jars. Assuming that your fixed cost per day is $200 (protection money), and the cost per jar to you is 50 cents, determine the price for which you should sell your dip in order to maximize your profit.

(4) Steve and Arlene are running another Ponzi scheme. After each $t$ weeks they have $\frac{100t}{4+t}$ customers, at $20$ per customer. They must pay out only $40$ per week, so that after $t$ weeks they have paid out $40t$. After how many weeks should they leave town? Where should they go?