

**Fake Exam 3    Calc 1    11/11/2015**

Each problem is worth 0 points. For full credit learn enough to do well on the real exam.

1. Evaluate  $\lim_{x \rightarrow -5} \frac{x^2 - 25}{5 - 4x - x^2}$ .

2. Evaluate  $\lim_{x \rightarrow \infty} \frac{x^2 - 25}{5 - 4x - x^2}$ .

3. Find all vertical asymptotes of  $f(x) = \frac{x^2 - 25}{5 - 4x - x^2}$ . Determine the one-sided limits at each.

4. a) Find the intervals on which  $f(x) = \frac{x^2 - 25}{5 - 4x - x^2}$  is increasing.
- b) Find the intervals on which  $f(x) = \frac{x^2 - 25}{5 - 4x - x^2}$  is decreasing.

5. Find all critical points of  $f(x) = 2x^3 - 4x^2 + 2x - 7$ .

6. Find the largest interval on which  $f(x) = 2x^3 - 4x^2 + 2x - 7$  is increasing.

7. Find the absolute maximum and minimum values of  $f(x) = 2x^3 - 4x^2 + 2x - 7$  on  $[0,2]$ .

8. Jon plans to sell jet-propelled golf balls. In his trial program he sold 200 golf balls each week at a price of \$100 apiece. His market research firm tells him that for each \$1 he drops his price, he can sell 5 additional golf balls. The golf balls cost \$60 each to produce. What price should he charge to bring in the largest possible revenue?