INTRODUCTION TO CALCULUS

MATH 1A

Unit 10: Worksheet

Problem 1: In this lecture we are interested in **infinity**. This means especially that we are interested in **large numbers**. Lets see who comes up with the largest number made of 5 digits or symbols. Your number has to be finite!

Problem 2: a) Draw the graph of $f(x) = x^2$ and $g(x) = 2^x$ on the interval $[0, 2]$. b) Now draw these graphs on the interval $[0, 10]$. There is some space to draw on the back of this worksheet.

Problem 3: What is $\lim_{x\to\infty} \frac{x^2}{2^x}$. Compute this using the l'Hospital rule.

Problem 4: Compute the limit:

$$\lim_{x\to\infty} \frac{\sin(3x) + x}{x^2 + x}$$

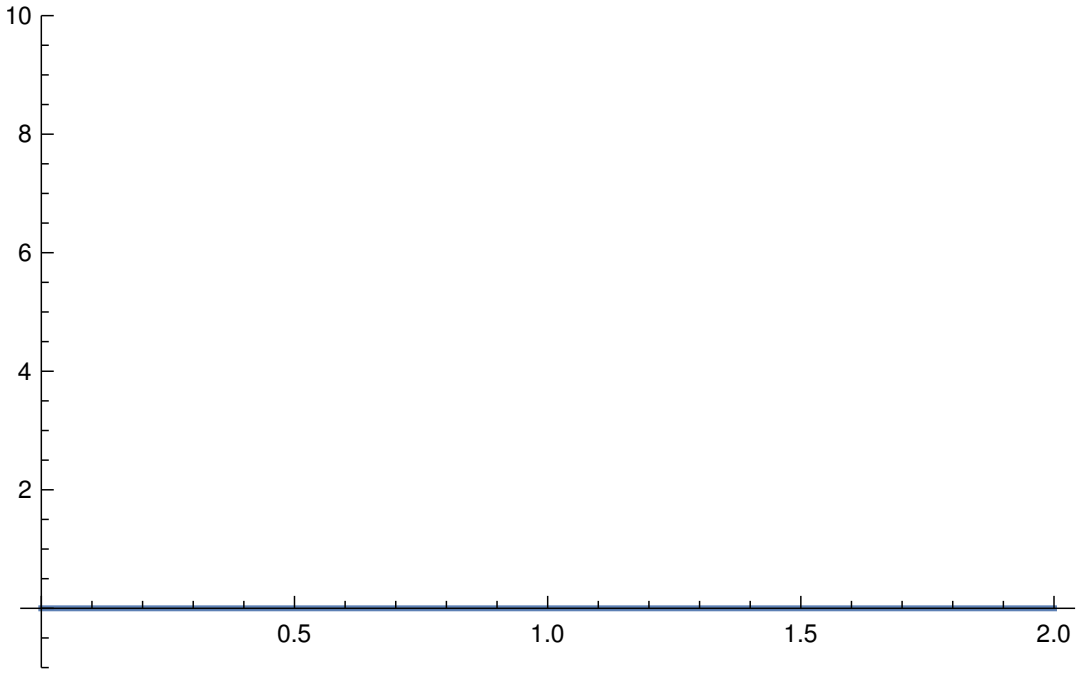
Problem 5: This had been done last time already but it actually should have belonged to this lecture Evaluate the following limit:

$$\lim_{x\to 1} (x-1)/\log(x-1)$$

Problem 6: Find the limit:

$$\lim_{x\to\infty} \log(2x+3)/\log(5x+1)$$

Graph for Problem 2a)



Graph for Problem 2b)