

Extra Problem for October 19, 2010

1. Let  $g(x) = 5^x$ .

- (a) Use a table to estimate  $\lim_{h \rightarrow 0} \frac{5^h - 1}{h}$ .
- (b) Calculate  $g'(x)$  using your estimation in the first part.
- (c) Estimate  $g'(0)$  using your estimation in the first part.
- (d) Estimate  $g'(1)$  using your estimation in the first part.
- (e) Graph  $g(x)$  and  $g'(x)$  on the same axis.