

NAME:

Math 105 - Quiz 11 - November 7, 2007

Instructions: Show all of your work and circle your final answers. Calculators are allowed, but notes and books are not.

1. (10 pts.) What is the minimum value of the expression  $x^3 + y$  if  $x + y = 4$  and  $x \geq 0$ ? Justify your answer. (Your final answer should be exact, rather than a decimal approximation. For instance, if the final answer is  $\pi$ , then writing 3.14 is not exact.)

2. (10 pts.) Evaluate  $\lim_{x \rightarrow 0} \frac{-1 + \cos x}{x^2}$ . If you use l'Hôpital's rule, mention it and justify your usage.