

Math 111 Quiz #9
June 2, 2010

Name: _____

Show all work and answers on a separate sheet with a box around your final answer. You may use a calculator.

1. Use the function $f(x) = \frac{4x^2-16}{x^2+1}$ for parts (a), (b), and (c) below.
- (a) (2 pts.) Find the domain of $f(x)$.
- (b) (2 pts.) Find the zeros of $f(x)$.
- (c) (2 pts.) Does $f(x)$ have a horizontal asymptote? If so, what is the **equation** of the horizontal asymptote?
(Hint: Long-run behavior of $f(x)$)
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2. (2 pts.) If you borrow \$7500 at 9% **simple** interest, how much do you owe after 18 months?

3. (2 pts.) How much do you need to deposit **today** in order to have \$15,000 after 10 years if you get 10% in an account **compounded quarterly**?

Notes: Simple Interest: $A = P(1 + rt)$ Compound Interest: $A = P\left(1 + \frac{r}{k}\right)^{kt}$