

MATH 105: SPRING 2011: QUIZ 5: DUE MONDAY MAY 9, 2011

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NOTE: Write your name *and* section number. Each question is worth 10 points. The quiz is closed book. You should be able to do the quiz in 10 minutes, but you have as long as you wish. Make sure your answer is easy to find – if you write multiple answers I will only look at the first.

Question 1 : We have four main tests to see whether or not a series converges: the comparison test, the integral test, the ratio test and the root test. Choose *one* of these tests and state it clearly and say a few words about its proof.

Question 2 : Consider $a_n = \frac{n^3 \cos(4^n)}{3^n}$. Does the series $\sum_{n=1}^{\infty} a_n$ converge or diverge? Justify your answer.

Question 3 : Find the third order Taylor series of $f(x) = \cos^2(x)$ at $x = 0$.