

Math 231 Section A1
Quiz 4
June 28, 2007

Name: _____

1) Determine if the following sequences converge or diverge. If they converge, find their limit. Cite any rules you apply.

a)

$$a_n = \ln \left(\sqrt{\frac{12n^2 - 5n}{3n^2 + 6n - 4}} \right)$$

b)

$$a_n = \frac{\sin(n)}{\ln(n)}$$

2) Determine if the following series converge or diverge. If they converge, find what they converge to. Cite any theorems or tests you apply.

a)

$$\sum_{k=1}^{\infty} \frac{k^2}{\ln(k)}$$

b)

$$\sum_{k=1}^{\infty} \frac{6^k - \pi^k}{(2\pi)^k}$$

Extra Credit: Determine if $\sum_{k=0}^{\infty} \frac{4}{n^2+4n+3}$ converges or diverges. If it converges, find what it converges to.