Math 172   Quiz 10   Name: _____

1 Apr 2016   Show Appropriate Work   Point Values in $\boxed{\text{boxes}}$.

1. $\boxed{2}$ Please indicate **T**rue or **F** false.

    (a) **T** / **F** : If $a_n \to 0$ as $n \to \infty$, the series $\sum a_n$ converges.

    (b) **T** / **F** : If $a_n \to 0$ as $n \to \infty$, the series $\sum a_n$ neither converges nor diverges.

    (c) **T** / **F** : If $\sum |a_n|$ converges, then $\sum a_n$ converges absolutely.

    (d) **T** / **F** : If $\sum |a_n|$ diverges, then $\sum a_n$ diverges absolutely.

2. $\boxed{4}$ Use the Limit Comparison Test to show the following series converges or diverges.

$$\sum_{n=4}^{\infty} \frac{\sqrt{n^3 + 7n}}{n^2 + 7n}$$

3. $\boxed{4}$ Use the Integral Test to show the following series converges or diverges. Be sure to verify the hypotheses.

$$\sum_{n=2}^{\infty} \frac{1}{n\sqrt{\ln n}}$$