Math 172 | Quiz 11 | Name: _____

5 Apr 2016 | Show Appropriate Work | Point Values in boxes.

1. [2] Use the Alternating Series Test to show the following converges.

$$\sum \frac{(-1)^n}{\sqrt{n}}$$

2. [2] Use the Ratio Test to show the following converges or diverges.

$$\sum \frac{n2^n}{(2n)!}$$

3. [2] Use the Root Test to show the following converges or diverges.

$$\sum \left(\frac{2n+1}{3n+4}\right)^n$$

4. [4] For the following series, specify the appropriate test to apply. If that test is either the Direct Comparison or the Limit Comparison, specify what series you would compare with. Do not write out the details of the test. For each, also determine if the series **Con**verges or **Div**erges.

(a) $\sum \frac{3n+1}{\sqrt{4n^5+7}}$ **Con / Div**

(b) $\sum \frac{1}{n^3+7}$ **Con / Div**

(c) $\sum \frac{(-1)^n}{\sqrt{n^2+1}}$ **Con / Div**

(d) $\sum \frac{1}{n(\ln n)^2}$ **Con / Div**