**7**. [15 points]

**a**. [7 points] Determine if the following series converges or diverges using the **Limit Comparison Test**, and circle the corresponding word. **Fully justify** your answer including using **proper notation** and showing mechanics of any tests you use.

$$\sum_{n=1}^{\infty} \frac{3n-2}{\sqrt{4n^3-5n^2+3}}$$

*Circle one:* **Converges** **Diverges**

*Justification (using the **Limit Comparison Test**):*

**b**. [8 points] Determine if the following series absolutely converges, conditionally converges, or diverges, and circle the corresponding word. **Fully justify** your answer including using **proper notation** and showing mechanics of any tests you use.

$$\sum_{n=1}^{\infty}(-1)^n\frac{1}{\sqrt{n}+1}$$

*Circle one:* **Converges Absolutely** **Converges Conditionally** **Diverges**

*Justification:*