

YOUR NAME: _____

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Read each problem **very carefully** before starting to solve it. Each problem is worth 5 points. It is necessary to show **all** your work. Correct answers without explanations are worth 0 points. GOOD LUCK!!

1. Determine whether the series $\sum_{n=1}^{\infty} \frac{(-1)^{n-1}}{\sqrt[3]{n}}$ converges absolutely, conditionally or not at all (**thoroughly justify** your conclusion).

2. Use the ratio or the root test to determine the convergence of the series $\sum_{n=1}^{\infty} \frac{(-1)^{n-1} n^2}{5^n}$.

3. **Bonus Problem:** Use any of the methods encountered so far (look table below) to determine convergence or divergence of $\sum_{n=1}^{\infty} \frac{3^n + (-2)^n}{5^n}$.

Table of Methods:

Sequences	Series	Series w/ Positive Terms
1. Function Method	1. Definition	1. Integral Test
2. Geometric Sequences	2. Telescoping Series	2. p Series
3. Limit Laws	3. Linearity	3. Comparison Test
4. Squeeze	4. Geometric Series	4. Limit Comparison
5. Continuity	5. Divergence Test	