

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. Find the limit of the sequence $a_n = \frac{3+7n^2}{9n+n^2}$. **Rigorously justify** your answer based on one of the results presented in class (in Section 8.1).

2. Use the absolute value test to find the limit of the sequence $a_n = \frac{\sin(2n)}{1+\sqrt{n}}$. **Explain rigorously** your reasoning and how you used the test.