QUIZ 7 - MATH 152 YOUR NAME:

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 $a_n = \frac{(-1)^n n}{n^2 + 1}$. Please, justify your answer.

2. Find the limit of the sequence $a_n = \sin(\pi n)$. Please, justify your answer.

3. Find the sum of the infinite series $\sum_{n=1}^{\infty} \frac{3+5^n}{7^n}$

4. Express the number $0.\overline{24}$ as a ratio of two integers.