

Calculus II, Quiz 3: 10.5

**Name:**

Please answer the following questions in the spaces provided. You may not use your textbook, calculator, or notes on this quiz.

1. Determine whether the following series converge or diverge. State what test you're using!

(a) (7 pts)  $\sum_{k=1}^{\infty} \frac{3^k k!}{k^k}$

(b) (7 pts)  $\sum_{k=1}^{\infty} \frac{7k^2 + 7k + 1}{k^3 + 7k^2 + \pi}$

(c) (6 pts)  $\sum_{k=1}^{\infty} 2^{-k+(-1)^k}$  (*Hint: Don't bother trying the ratio test; it fails.*)