**MATH 162 Practice QUIZ 4B**

1. For each of the following improper integrals, determine *convergence* or *divergence*. *Justify your answers!*

(a) 

(b) 

(c) 

 (d) 

2. For each of the following sequences determine *convergence* or *divergence*. In the case of convergence, determine the limit of the sequence as well. Briefly, justify each answer.

(a) 

(b) 

(c) 

(d) 

(e) 

3. Consider the following *recursively defined* sequence:

b1 = 1

b2 = 2

bn = bn-1 + 5bn-2 for all n ≥ 3.

Let rn = bn/bn-1 and assume that the limit of rn as n→∞ exists. Find this limit. (Show your work.)

4. Which of the following infinite series are *geometric* and which are not? For those that are geometric, determine convergence or divergence. In the case of convergence, find the limit. Show your work!











***Extra Credit:*** Determine whether the following improper integral converges or diverges. Show your work!



*Zeno-phobia: the irrational fear of converging sequences.*

*- Anonymous*