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| Assessment 5Dusty Wilson Math 163 No work = no credit **No CAS Calculators** | | **Name**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  *The infinite! No other question has ever moved so  profoundly the spirit of man.* David Hilbert 1862 - 1943 (Prussian mathematician) | | | |
| Warm-ups (1 pt each): | =\_\_\_\_\_ | | =\_\_\_\_\_ | =\_\_\_\_\_ |

(1 pt) According to Hilbert (above), what is the most profound question ever asked? Answer using complete English sentences.

(8 pts) Answer the following

1. What is the formula to find 7!
2. Find 
3. Evaluate 
4.  is called a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ series. It converges (equals a number) when:

(8 pts) Find a power series representation for . When does this series converge (equal a number)?

(8 pts) Integrate  using power series. When does this series converge (equal a number)?