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| Test IIIDusty Wilson Math 153 No work = no credit  No Symbolic Calculators | | **Name:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  *Combinatorial analysis, in the trivial sense of manipulating binomial and multinomial coefficients, and formally expanding powers of infinite series by applications ad libitum and ad nauseamque of the multinomial theorem, represented the best that academic mathematics could do in the Germany of the late 18th century."*  Richard A. Askey (1933 - )  American mathematician | |
| Warm-ups (1 pt each): | =\_\_\_\_\_ | =\_\_\_\_\_ | =\_\_\_\_\_ |

(1 pt) How much respect did Askey have for those working on infinite series in the 18th century? Answer using complete English sentences.

(10 pts) Does converge or diverge? Justify your answer.

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(10 pts) Does diverge? If not, is it conditionally or absolutely convergent? Justify your answer.

(10 pts) Find the values of *x* for which the series  converges. Find the sum of the series for those values of *x*.

(10 pts) Does diverge? If not, is it conditionally or absolutely convergent? Justify your answer.

(10 pts) Determine whether the sequence  converges or diverges. If it converges, find the limit.

(10 pts) Does diverge? If not, is it conditionally or absolutely convergent? Justify your answer.

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| Test 3Dusty Wilson Math 153 No work = no credit  No Symbolic Calculators | | **Name:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  *Combinatorial analysis, in the trivial sense of manipulating binomial and multinomial coefficients, and formally expanding powers of infinite series by applications ad libitum and ad nauseamque of the multinomial theorem, represented the best that academic mathematics could do in the Germany of the late 18th century."*  Richard A. Askey (1933 - )  American mathematician | |
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