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| Assessment 9Dusty Wilson Math 254 No work = no credit **No CAS Calculators** | **Name**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ *You are quite right in saying that it is well not to go brooding over one's own thoughts and feelings … but you don't know what it is to live utterly alone.* George Stokes 1819-1903 (Irish mathematician) |

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| Warm-ups (1 pt each): | Expand  =\_\_\_\_ | =\_\_\_\_\_ |

(1 pt) The quote (above) is from a letter that Stokes wrote his future wife. Was Stokes completely satisfied with his mathematical endeavors? Please explain using complete English sentences.

(10 pts) Calculate the flux of  across the surface parameterized by  with  and  and the surface oriented downward.

(1 point extra credit) Last week I was late to class because I had to attend a training on how to use a super dishwasher (in the bio labs). The washer does a special rinse with .

(10 pts) Answer the following:

1. If , find .
2. Find the divergence of  at the point 
3. Calculate the curl of 

(10 pts) Use a surface integral to calculate the surface area of the part of the plane  inside the cylinder .