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| Assessment 1Dusty Wilson Math 163No work = no credit | **Name**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*It appears to me that if one wishes to make progress in mathematics, one should study the masters and not the pupils.*Niels Henrik Abel1802 - 1829 (Norwegian mathematician) |

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

(1 pt) According to Abel (above), who should we learn from? Answer using complete English sentences.

(6 pts) If  and  find the following:

1. 
2. 
3. 
4. 
5. (2 pts) Find a unit vector parallel to 

(2 pts) Write an inequality to describe the region between the *xz*-plane and the vertical plane . (Don’t include the planes within your inequality).

(4 pts) Consider the two points and .

a.) Find a vector  with representation given by the directed line segment . Write your answer using notation.

b.) Find a vector parallel to  but with length 4.

(4 pts) Consider the two forces  and that are pictured below and have respective magnitudes of 200N and 300N. Find the magnitude of the resultant force and the angle it makes with the positive *x*-axis.



(4 pts) Find the center and radius of the sphere 