Calculus D - Homework Assignment Sheet Name: _____ Per. ____

Chapter 16 - Vector Calculus

Each assignment has a total possible of ***10 points***. For each section, self-grade for completion. (You may use ½ points.) I trust that you will give an honest evaluation of your own work. Your signature at the bottom indicates that this is an honest, accurate assessment of your work. Grades will be verified, as explained in class. Try additional problems for extra practice. Each assignment lists "Priority Problems" with a "PP" designation. Full credit awarded for completion of full assignment. *Assignments are subject to change. Any changes will be announced in class.*

_____ 16.1: p. 1032 #1 – 9 odd*, 11 – 18 matching, 21 – 26 no sketch, 29 – 32
16.5: p. 1068 #1 – 7 odd, 12, 13 – 18, 21, 22
*Don't sketch. Check with back to see if results make sense
PP: 16.1 #29 – 32, 16.5 #1 – 7 odd, 12, 13 – 18

_____ 16.2: p. 1043 #1 – 21 odd, 39, 40, 41 (Read the other problems too.)
Hints: #7 & 15 Parametrize and find $\int_C f\,ds$ for each segment, then add.
Note: You will need to do some integration by parts.
PP: #1, 3, 7, 9, 15, 17, 21, 40

_____ 16.3: p. 1053 #1 – 27 odd (skip 25), 2, 28
Read p. 1052-1053 Conservation of Energy (#2 Answer: 6)
PP: #13 – 21 odd

_____ 16.4: p. 1060 #1, 2, 5 – 14, 17
PP: #5 – 13 odd

Quiz 16.1 – 16.4
Optional checkpoint and/or review.
Does not need to be included with HW.

_____ 16.6: p. 1078 #3 – 6*, (29, 30)**, 33 – 36, 38, 40, 42, 47
Also, look at 7, 9, & 11 in back of book.
*Identify and find rectangular equations by eliminating parameters. **Graphing Optional
Hints: #38 & #42 Solve in rectangular using formula from Chapter 15
#47 Inside root is a square trinomial: $\sqrt{a^2+2ab+b^2}=\sqrt{(a+b)^2}=(a+b)$ then integrate.
PP: #34, 35, 38, 40, 42, 47

_____ 16.7: p.1091 #5 – 27 odd (skip 25)
Hints: #17 the surface is the cylinder and parametric form is easier. Also, see note below!
#15 & #23 Use $g(x,y)=z=\sqrt{a^2-x^2-y^2}$. #23, use $G(x, y, z) = g(x, y) – z$ for negative orientation.
#27 do all six sides and add. PP: #9, 13, 19, 21, 27

_____ 16.9: p. 1103 #1, 5 – 13 odd, 25, 26, 27
Note: $V(E)$ = Volume of Solid
Hint #13 Use spherical after integral is set up
PP: #5 – 13 odd

Note for 16. 7 & 16.8 Surface Integrals:
Be sure to use the formulas and procedures outlined in class. The book and the solution guide (and likely other online solutions) make this much more confusing by using several different formulas and equations.

_____ 16.8: p. 1097 #1, 2, 3, 7, 8, 9, 10, 11a, 12a, 13
Hint #7: Surface $x + y + z = 1$ is in the first octant. Answer #13: π (Solve both ways)
PP: #2, 7, 10, 12a, 13

_____ **Total** (80 Points) Signature: _____ Date: _____

Verified By: _____
Print Signature