18.02   Problem Set 6

(Due Tuesday, April 5, 11:59:59 PM)

Part I   (140 points)

HAND IN ONLY THE UNDERLINED PROBLEMS
(The others are *some* suggested choices for more practice.)
EP = Edwards and Penny; SN = Supplementary Notes (most have solutions)

Change of variables
Reading: EP §14.9, SN §CV
Exercises:
EP §14.9 7, 9, 10, <u>12</u>, 20, <u>28</u>, <u>29</u>
EP §14.Misc <u>54</u>
SN §3D <u>2</u>

Triple integrals in spherical and cylindrical coordinates
Reading: EP §14.7
Exercises:
EP §14.7 <u>3</u>, 10, 15, <u>22</u>, <u>28</u>, <u>35</u>, <u>37</u>, 38, 40, <u>42</u>

Vector fields, curl, divergence
Reading: EP §15.1, SN §§V1, V8
Exercises:
EP §15.1 <u>11-14</u>, <u>22</u>, 28, 31, <u>32</u>, 34, 36, <u>37</u>, <u>38</u>, 39
SN §6A 4

Line integrals in the plane and in space
Reading: EP §15.2, SN §V11
Exercises:
EP §15.2 5, 8, <u>11</u>, 12, <u>13</u>, <u>18</u>, <u>31</u>, 33
SN §6D <u>2</u>, 6

Path independence and conservative fields
Reading: EP §15.3, SN §§V2, V11
Exercises:
EP §15.3 <u>3</u>, 6, 11, <u>30</u>, <u>31</u>, <u>35</u>

Gradient fields and potential functions
Reading: EP §15.3, SN §V12
Exercises:
EP §15.3 17, 23, <u>25</u>, 34
SN §4C 2, <u>3</u>
SN §6E <u>4</u>, <u>6</u>