MATE 3063 assignment 8: sections 14.7, 15.1

77. Find the local extrema and saddle points, and graph by choosing suitable domain and viewpoint:

(a) $f(x, y) = x^2 + xy + 2y^2 + 2x$.

(b) $f(x, y) = xy + e^{-xy}$.

(c) $f(x, y) = (x^2 + y^2)e^{-y}$.

(d) $f(x, y) = \sin(x)\sin(2y), \ -\pi < x < \pi, \ -\pi/2 < y < \pi/2$.

78-80. Exercises 22, 26, 39 of §14.7.

81. Exercise 40 of §14.7.

For all exercises involving integration, show a figure indicating the region.

82-85. Exercises 6, 7 (include figure), 9, 12 of §15.1.