

Brief solutions to selected problems in homework 08

1. Section 14.6: Solutions, common mistakes and corrections:

33 $f(x, y) = x^2 - 3xy + 5$, $P_0(2, 1)$

$f_{xx} = 2$

$f_{xy} = -3 \Rightarrow |Error| \leq \frac{3}{2} (|x-2| + |y-1|)^2$

$f_{yy} = 0 \leq (0.1 + 0.1)^2 \frac{3}{2} = \frac{3}{50}$

$L(x, y) = 3 + (x-2) - 6(y-1) = 7 + x - 6y$

$(f_x(2, 1) = 1)$
 $(f_y(2, 1) = -6)$

Figure 1: Section 14.6, problem 33