Key Problems

Problem 1.

Find the linear approximation of f around the point $(x,y) = (1,1)$:

a) $f(x,y) = 2x + 3y$

b) $f(x,y) = x^2 + y^2$

c) $f(x,y) = 4x^2 - 6xy + 9y^2$

d) $f(x,y) = x^2 - 2x + 4y^2$

e) $f(x,y) = x^3 - 3xy + y^3$

f) $f(x,y) = y^2 - x^3 + 3x$

Problem 2.

Problem 9.27 - 9.30 (norwegian workbook, optional)

Answers to Key Problems

Problem 1.

a) $5 + 2(x - 1) + 3(y - 1)$

b) $2 + 2(x - 1) + 2(y - 1)$

c) $7 + 2(x - 1) + 12(y - 1)$

d) $3 + 8(y - 1)$

e) -1

f) $3 + 2(y - 1)$