MATE 3063 assignment 5: section 14.4

45. Find an equation of the tangent plane to the given surface at the given point:

(a) $z = \dfrac{y+1}{x^2}, \ (2, -1, 0)$.

(b) $z = \dfrac{1-x}{1+y}, \ (0, 0, 1)$.

(c) $z = x \ln(x - 2y), \ (3, 1, 0)$.

46. Explain why the function is differentiable at the given point, then find its linearisation $L(x, y)$ at that point:

(a) $f(x, y) = \sqrt{xy}, \ (2, 2)$.

(b) $f(x, y) = x \cos(x + y), \ (1, -1)$.

(c) $f(x, y) = y + \sin(x/y), \ (0, 2)$.

47-48. Choose two of problems 25–30 of text.

49–52. Problems 31, 35, 39, 42.