

# SCHOOL OF MATHEMATICS AND PHYSICS

## Tangent plane

Find an equation of the tangent plane to the given surface at the specified point for the following functions.

1.  $f(x, y) = 3y^2 - 2x + x$ , at  $(2, -1)$ .

2.  $f(x, y) = \sqrt{xy}$ , at  $(1, 1)$ .

3.  $f(x, y) = xe^{xy}$ , at  $(2, 0)$ .

4.  $f(x, y) = x \sin(x + y)$ , at  $(-1, 1)$ .

5.  $f(x, y) = \ln(x - 2y)$ , at  $(3, 1)$ .

Use the online simulation from the SciMS website to help you visualise the tangent plane for each case. Click on the link below:

[https://teaching.smp.uq.edu.au/scims/Adv\\_calculus/PDTplane.html](https://teaching.smp.uq.edu.au/scims/Adv_calculus/PDTplane.html)

