

Math 250B
Assignment 1

Deadline: Wed Sept 23, 4:30pm Pacific Time
Submit on D2L or email HowardL@camosun.ca

Number of Questions: 4
Total Marks: 10

Show all your work for full marks.

You MAY use the course website (notes, videos etc)

You may NOT copy from others (classmates, tutors, Chegg etc)

Submit jpg or pdf files

Feel free to handwrite your solutions and take photos of your work

Covers Sections 11.7, 12.1-12.4

1. [3 marks] Sketch each of the following surfaces. Label the three axes and show the shape of the surface. You do not need to label any points on the surface.

a) $y = -x^2$

b) $z = 400 - x^2 - y^2$

c) $z^2 = 81(x^2 + y^2)$

2. [3 marks] Compute f_x , f_y and f_z for

$$f = x^2 e^{3y} \ln(z^3 + 1) + y^4 z^6 \arctan x$$

3. [2 marks] Compute $\frac{\partial^2 f}{\partial x^2}$ for $f = yz \sin x^2$

4. [2 marks] Find all points (x, y, z) where the tangent plane to the surface is horizontal:

$$z = x^3 - 12x + y^2 + 8y + 10$$