

Name: _____

1. (5 points) Find the tangent plane to

$$z = y \sin x + 2y^2 \cos x$$

at $(\frac{\pi}{2}, 2, 2)$.

2. (5 points) Let

$$z = \sqrt{x^2 + 2y^2} - 2xy, \quad x = \cos t, \quad y = \sin t$$

Find $\frac{dz}{dt}$.