

2015-16 University of Utah Undergraduate

Problem Solving Contest

Problem 3

Due

4 Dec

Consider the elliptic paraboloid  $E$  given by  $z = x^2 + y^2$  and the plane  $P$  given by  $z = 2y + 3$ .

find an equation (using only variables  $x$  and  $y$ ) of an ellipse that will have the same exact shape as the ellipse formed in the intersection of  $E$  and  $P$ .