

Name: _____

Math 234 Quiz 3

Section: 328 329

Sep 23, 2014

1. (10 pts) (a) Find the equation of the plane that contains the points $(1, 0, 0)$, $(0, 1, 0)$ and $(1, 1, -1)$. (b) Find the intersection of the plane with the z -axis.

2. (10 pts) Classify the quadratic form

$$Q(x, y) = -2x^2 + 4xy - 6y^2$$

as definite, indefinite, or semidefinite.

Bonus. (5 pts) Let $Q(x, y)$ be as above. Rewrite $Q(x, y)$ in terms of polar coordinates (i.e. r and θ), and simplify the expression as much as possible.