

MATH 2242-090 — Spring 2016 — Dr. Clontz — Quiz 8

Name: _____

- Each quiz question is labeled with its worth toward your total quiz grade for the semester.
- On multiple choice problems, you do not need to show your work. No partial credit will be given.
- On full response problems, show all of your work and give a complete solution. When in doubt, don't skip any steps. Partial credit will be given at the discretion of the professor.
- This quiz is open notes and open book.
- This quiz is due at the end of class. Quizzes submitted over one minute late will be penalized by 50%.

1. (10 points) Find a polar coordinate $\mathbf{p}(r, \theta)$ corresponding to the Cartesian coordinate $(-1, \sqrt{3})$.

2. (10 points) Which of these equations using cylindrical/spherical coordinates describes a plane in \mathbb{R}^3 ?

☐ $r = 3$

☐ $\theta = \frac{\pi}{4}$

☐ $\rho = 2$

☐ $\phi = \frac{2\pi}{3}$

3. (10 points) Find an affine transformation $\mathbf{T}(u, v) = (x, y)$ mapping the unit square $[0, 1] \times [0, 1]$ in the uv plane to the parallelogram with sides given by the lines $y = x$, $y = x + 2$, $y = 3x$, $y = 3x - 6$ in the xy plane.