

Quiz #3

Monday, February 12 2018

Duration: 15 min

NAME: _____

Please write clearly and properly. Explain your answers appropriately.

Problem	Grade
1	
2	
3	
Total	

Problem 1 (~ 4 points.).

Find a parametric equation of the following lines in 3-dimensional space:

- (1) The line through the point $A(0, 0, 1)$ and directed by the vector $\vec{u} = (2, -1, 0)$.

- (2) The line through the points $P(1, 1, 0)$ and $Q(1, 1, 1)$.

Problem 2 (~ 2 points.).

What is the curve parametrized by the function $f(t) = (1 + 3 \cos(t), 3 \sin(t))$ in the xy -plane? Draw a sketch of this curve.



Problem 3 (~ 2 points.).

True or False? *No explanations required.*

- (1) The line parametrized by the function $f(t) = (2t, 3t, 4t)$ goes through the origin.

- (2) The line parametrized by the function $f(t) = (2t, 3t, 4t)$ goes through the point $A(-2, -3, -4)$.

- (3) The lines parametrized by the functions $f(t) = (1-2t, 1+3t, t)$ and $g(t) = (2t, 1-3t, t)$ are parallel.

- (4) The curve parametrized by the function $f(t) = (4 \cos(t), 4 \sin(t), 4t)$ is a circle.