

Name: _____ Section: _____

Answer all questions and show your work. Unsupported answers may receive *no credit*. You may not use a calculator on this quiz. Allow 15 minutes for the quiz.

1. (5 points) Consider a lamina which is the quarter circle, $Q = \{(x, y) : x^2 + y^2 \leq 4, x \geq 0, y \geq 0\}$ with density 3 units of mass per unit of area.

Write integrals which give the moments M_x , M_y and the total mass M of the lamina. Do not evaluate the integrals.

2. (2 points) Does the curve with parametric equations $x = t + 1$ and $y = t^3 - t - 2$ contain the point $(3, 4)$? If the answer is no, explain why. If the answer is yes, find t .

3. (3 points) Consider the curve given by the parametric equations $x = 2t - 4$ and $y = t^2$. Find a cartesian equation for the curve and put the equation in the form $y = ax^2 + bx + c$.