

Name: \_\_\_\_\_

**Math 1300-005 - Spring 2017**

Quiz 7 - 3/3/17

*On my honor, as a University of Colorado at Boulder student, I have neither given nor received unauthorized assistance on this work.*

Signature: \_\_\_\_\_

*Guidelines:* You are permitted to use notes, the book, in-class worksheets/solutions, and your classmates on this quiz. Computers and graphing technology of any kind, including calculators, are not allowed (exceptions made for those who have an e-book). Please show all work and clearly denote your answer.

1. Consider the curve described by points satisfying the equation

$$x^2 + 2x^4y^3 = 14 + y^2 - x.$$

Find an equation of the tangent line to the curve at the point  $(1, 2)$ .

2. A 5 meter long ladder is leaning against the side of a building. If the bottom of the ladder is pulled away from the wall so that the angle between the ladder and the ground is changing at a rate of  $-3$  rad/s, at what rate is the distance between the bottom of the ladder and the wall changing when the top of the ladders is 3 meters from the ground?