

UNIVERSITY OF REGINA  
DEPARTMENT OF MATHEMATICS AND STATISTICS  
MATH 110 200730 Quiz 4 (Section 004)

Time: 20 minutes

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

Instructor: Dr. Edward Doolittle

Student #: \_\_\_\_\_

(marks) Please do questions 1 and 2. You have 10 minutes to do each question, for a total of 20 minutes for the quiz. A non-programmable calculator of the type mentioned in the course outline is allowed. If you finish early, I suggest you check your work thoroughly. **Please do not disturb your colleagues by climbing over them while they are trying to write the quiz.**

- (10) 1. If a stone is thrown vertically upward from the surface of the moon with a velocity of 10 m/s, its height (in meters) after  $t$  seconds is  $h(t) = 10t - 0.83t^2$ .
- (a) What is the velocity of the stone after 3 s?
  - (b) What is the maximum height reached by the stone?

- (10)      2. Use implicit differentiation to find an equation of the tangent line to the curve  $x^2 + y^2 = (2x^2 + 2y^2 - x)^2$  at the point  $(0, 1/2)$ .