QUIZ #1: CALCULUS 1A (Stankova)
Wednesday, January 28, 2004
Section 10:00–11:00 (Voight)

Name:

Please complete the following problem in the space provided. You may *not* use a calculator. You will have 15 minutes to complete the quiz.

Please include all relevant intermediate calculations and explain your work when appropriate.

Problem 1. *The position of a hydrogen fuel-cell vehicle is given by the values in the following table:*

t *(seconds)*	0	5	10	15	20	25
s *(feet)*	30	150	450	950	1600	2575

(a) *Find the average velocity for the time period beginning when* $t = 5$ *and lasting:*

(i) 15 *seconds*

(ii) 10 *seconds*

(iii) 5 *seconds*

(b) *Use the graph of* s *as a function of* t *to estimate the instantaneous velocity when* $t = 5$.

QUIZ #1: CALCULUS 1A (Stankova)
Wednesday, January 28, 2004
Section 11:00–12:00 (Voight)

Name:

Please complete the following problem in the space provided. You may *not* use a calculator. You will have 15 minutes to complete the quiz.

Please include all relevant intermediate calculations and explain your work when appropriate.

Problem 1. *If a pellet is shot upward by the Mars rover, its height in kilometers after t seconds is given by $h = 3t - t^2$.*

(a) *Find the average velocity over the given time intervals:*

(i) $[0, 1]$

(ii) $[0, 0.5]$

(iii) $[0, 0.1]$

(b) *Graph the height of the pellet as a function of time; draw the tangent line to the graph at time $t = 0$.*

(c) *Find the initial velocity at which the pellet was shot.*