Online Math 153 Calculus I-a
Worksheet: Section 1.3 The Limit of a Function
If an arrow is shot upward on the moon with a velocity of $58 \mathrm{~m} / \mathrm{s}$, its height in meters $t$ seconds later is given by $h=58 t-0.83 t^{2}$. Using your calculator determine the following.

Note: Average Velocity $=\frac{h\left(t_{2}\right)-h\left(t_{1}\right)}{t_{2}-t_{1}}$

1. Find the average velocity over the given intervals:
a. $[1,2]$
b. $[1,1.5]$
c. $[1,1.1]$
2. Estimate the instantaneous velocity when $t=1$ by continuing to decrease the interval over which you calculate the average velocity.
3. Did you guess correctly? The instantaneous velocity is $56.34 \mathrm{~m} / \mathrm{s}$ when $t=1$.
