

DATE: _____

Average Velocity (Average Rate of Change)

1. The height of a rocket at time $t \geq 0$ is given by $x(t) = 80t - 12t^2 + 8$. Find the average velocity of the rocket from time $t = 4$ to $t = 5$.

2. The following data give the distance (in feet) at a given time (in seconds) of a vehicle from its starting position. The vehicle travels in a straight line.

Time (sec)	0	0.4	0.8	1.2	1.6	2.0	2.4	2.8	3.2	3.6
Distance (ft)	0	56	105	146	180	208	230	246	257	263

(a) Find the average velocity from $t = 0.8$ to $t = 3.2$.

(b) Find the average velocity from $t = 1.2$ to $t = 2.8$.

(c) Find the average velocity from $t = 1.6$ to $t = 2.4$.

(d) Use your answers from part (a), (b), and (c) to estimate the instantaneous velocity at $t = 2.0$.