

DATE: _____

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

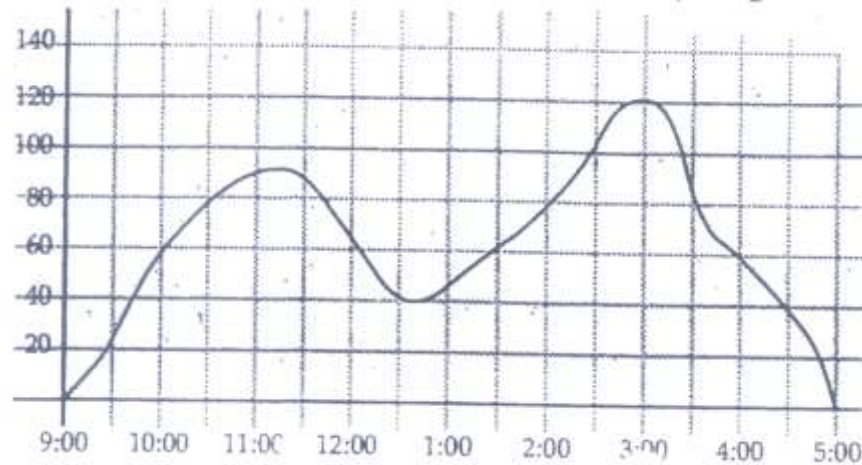
b) Find the instantaneous velocity of the rocket at time $t = 4$.

c) How long did it take the rocket to reach its highest point?

d) Find how high the rocket traveled.

e) Find the acceleration of the rocket at time $t = 4$.

2. A salesman travels among several towns located next to a straight highway. The graph below gives the salesman's distance from his home (in miles) at a given time on Friday.



- a) What was the salesman's average speed from 9 AM to 10 AM?
- b) What was the salesman's average speed from 3 PM to 4 PM?
- c) The salesman was clocked (and pulled over) by a policeman at 3:30 PM. How fast was he driving at this time?

3. 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 over the first 263 feet.
- b) Find the average velocity from $t = 1.2$ to $t = 2.8$