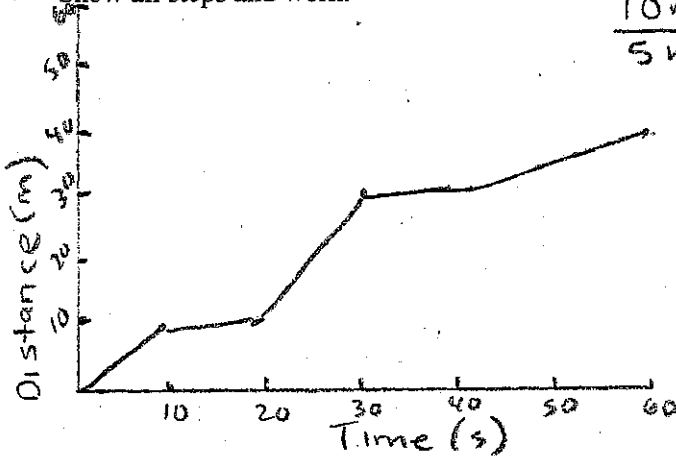Force and Motion Practice Test

1. On a road trip, Mike drives 2.5 hours and covers 100 miles. He then takes an hour break for lunch. He finishes the trip by covering 140 miles in 3.5 hours. What was his average speed? Show all steps and work.
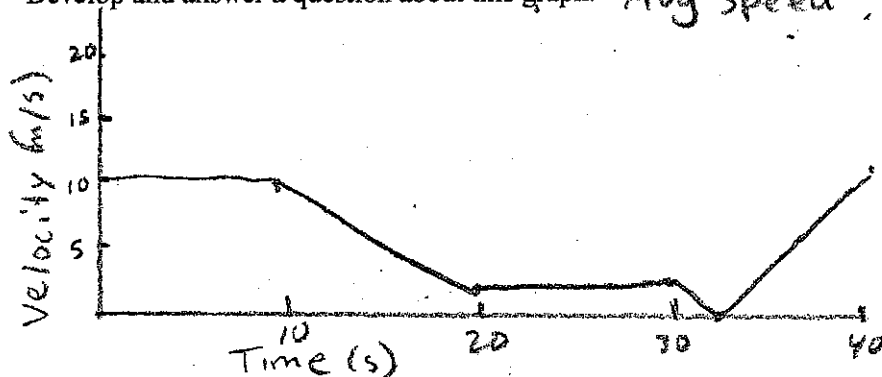
M	H
100	2.5
140	1
	3.5

$$\frac{240m}{7h} = 34.3mph$$

2. A snail crawls a distance of 10 meters in a time of 5 hours. What is her average speed? Show all steps and work.

$$\frac{10m}{5h} = 2m/h$$

3. What kind of graph is pictured above? How do you know? Speed, because it's axes are distance & time

4. In which interval was speed greatest? 20-30s

5. Develop and answer a question about this graph. Avg speed? $\frac{40m}{60s} = .67m/s$

6. What kind of graph is pictured above? How do you know? Acceleration, because its axes are velocity & time.

7. What happened in the 20-30 second interval? constant velocity

8. Develop and answer a question about this graph.

What happened at 32 seconds? The object stopped moving.

9. What causes acceleration? Unbalanced force

10. Label as scalar or vector:

  V a. 27N at 15degrees
  V b. 27mph east
  S c. 3 km
  V d. Force
  S e. Speed

11. Two deer are pushing on each other's antlers. One deer pushes 200N east while the other deer pushes 150N west. What is the net force? Which direction will the deer go?

200N (E) →   ← 150N (W)

200
- 150
_____
50N(E) net force.

Deer move East.