



Part 10: Review Assignment

Name: _____

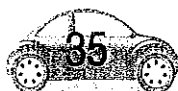
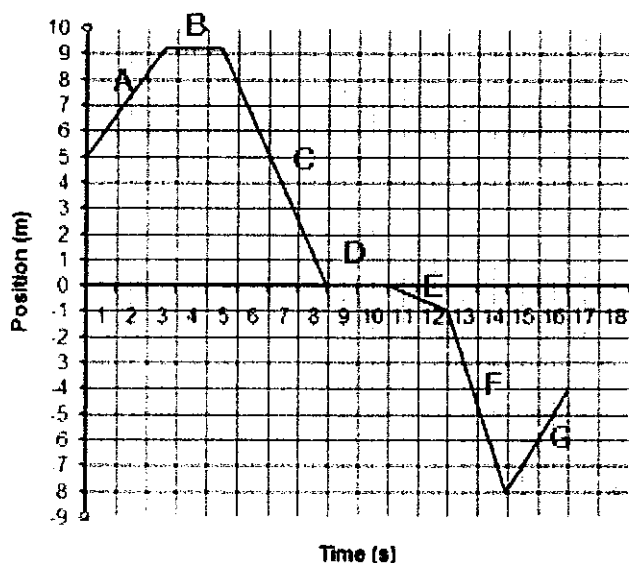
Complete the following assignment **individually** and hand it in to your teacher on the assigned due date. This assignment is for **marks**.

Due date: _____ Marks: _____ /45 = _____ %

1. In your **own words** define or explain the following (/9)
 - a) Motion: _____
 - b) Distance: _____
 - c) Velocity: _____
 - d) Acceleration: _____
 - e) Uniform motion: _____
 - f) Non-uniform motion: _____
 - g) Newton's 1st Law: _____
 - h) Newton's 2nd Law: _____
 - i) Newton's 3rd Law: _____

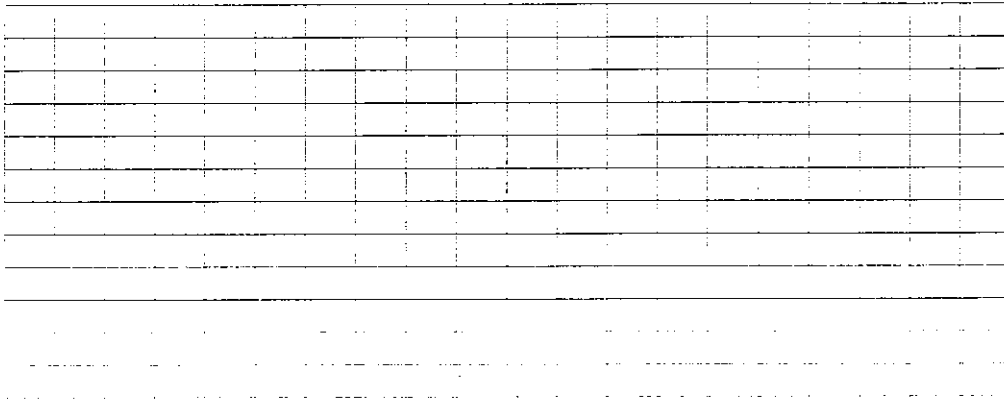
2. An owner takes her dog out for a walk. The dog is let off leash and its movement is tracked and graphed. For each section of the graph describe the dog's movement in terms of direction (relative to the owner) and speed. (/7)

Movement of a Dog - Position vs Time



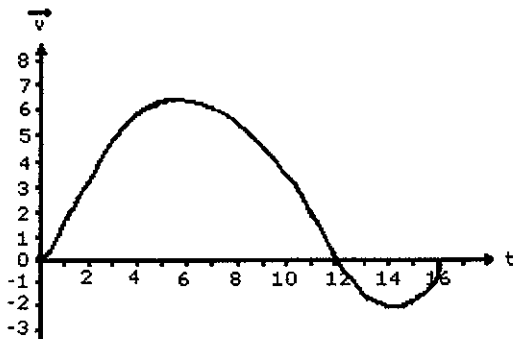
4. Use the data provided in the table below to plot a **position-time graph**. Connect the points with a **smooth curve**. (5)

t(s)	d(m)
0	+16.5
1	+11.0
2	+6.5
3	+3.0
4	+0.5
5	0



- a) Describe the motion demonstrated in the graph. (2)

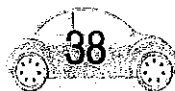
5. Use the **velocity-time graph** below to answer the questions. The graph shows the motion of an object tracked by a **motion sensor**.



- a) Find the *average acceleration* during each time interval indicated below to complete the table. (/6)

t_i (s)	t_f (s)	\vec{v}_i (m/s)	\vec{v}_f (m/s)	\vec{a}_{av} (m/s ²)
0	6			
6	12			
12	16			
2	8			
5	14			
0	12			

6. Use mathematical means to determine the answers to the following. Make sure you **show all your work** and report your answers in **correct significant digits**. (you will be penalized ½ mark for all work not answered in SD)
- a) A girl on a scooter travels 125 kilometers in 5.0 hours. She stops for dinner at a restaurant along the road, then leaves. She averages the same speed for 2.0 more hours before reaching her destination. How far did she travel after leaving the restaurant? (/2)
- b) The fastest land animal is the cheetah. It has been timed at 19 m/s in 2.0 second from standing still. What is the cheetah's acceleration? (/2)
- c) Find the acceleration of plane that is flying at 190 m/s and then slows to 165 m/s in 15.2 s. (/2)
- d) Find the average acceleration of a runner who starts from rest and reaches a velocity of 7.28 m/s to the right of the coach in 5.2 s. (/2)
- e) Find the acceleration of a puck moving at 10.3 m/s on the ice. The defenceman hits the puck with his stick for 0.25 s causing it to move 24.3 m/s in the same direction. (/2)



Forces:

- 1) Two forces acting on the same object in the same direction will do what? Explain (2 marks)

- 2) Two unbalanced forces acting on the same object in opposite directions will do what? Explain. (2 marks)

- 3) If forces acting on an object are in perfect balance, what will you observe the object do? Explain (2 marks)

- 4) We accelerated an object 4 m with a force of 5 N. What would we need to do to accelerate an object with twice as much mass the same distance? (2 marks)

- 5) What explains why you can pull a table cloth out from under the plates on a table without moving the plates? How does this work? (2 marks)

- 6) Chewbacca (from the star wars movies) is floating in outer space (yes, he has a space suit on). He sees that the Death Star (a human made planet created by the forces of the evil empire) is about to attack another planet. He decides to push the death star with all his might. What will the results of Chewbacca's efforts be and why? (2 marks)

- 7) Draw FBD to illustrate the forces acting upon objects in the following scenarios: (2 marks each)
 - a. An egg is pushed out of its nest and falls to the ground.
 - b. A paper airplane glides through the air.
 - c. Football is thrown by a quarterback with a perfect spiral.

- 8) A 5 kg bag is pushed across the floor with an acceleration of 1.5 m/s^2 . Calculate the force on the book. (2 marks)
- 9) When a person base jumps from a mountain, they accelerate due to the force of gravity (9.81 m/s^2). If a force of 640 N is exerted on the person, what is their mass? (2 marks)