Answer the following questions:

1. What is the graph about?

2. What does the vertical axis measure (include units)?

3. What does the x axis measure (include units)?

4. Interpolate (determine data between points): Which car had gone the farthest distance by...
   a) 5 seconds
   b) 10 seconds
   c) 15 seconds

5. At what time did one car pass the other?

6. How far did car 1 go at time...
   a) 4 seconds
   b) 17 seconds

7. How far did car 2 go at time...
   a) 12 seconds
   b) 19 seconds

8. At what time were the cars the farthest apart?

9. Extrapolate (make the lines go off the end of the chart to determine future values): If the race went to 75 meters, who do you think would win?

10. Determine what the time would be for car 1 and 2 at:
    a) 65 meters
    b) 70 meters
    c) 75 meters

11. What could happen to change your predicted outcome? Name two different factors.
    a)
    b)
Math 11aw  G-4  Line graphs  Name: ___________ Block: _____

12. Determine average velocity (use distance (meters) ÷ 10 (seconds) ) of each car between
       Car 1                                                  Car 2

1 – 10 seconds

10 – 20 seconds

Section 2: Below is a table with data. Create a graph, plot it, and then answer questions.
Two water tanks, both holding 120 liters of water, are drained at the same time. Tank 1 is
thinner and taller than tank 2, which is shorter and wider. The valves were opened and the
remaining volume of water calculated every 5 minutes. Data was recorded below.

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>5</th>
<th>10</th>
<th>15</th>
<th>20</th>
<th>25</th>
<th>30</th>
<th>35</th>
<th>40</th>
<th>45</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tank 1</td>
<td>120</td>
<td>100</td>
<td>82</td>
<td>66</td>
<td>51</td>
<td>37</td>
<td>25</td>
<td>15</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>Tank 2</td>
<td>120</td>
<td>104</td>
<td>91</td>
<td>77</td>
<td>63</td>
<td>50</td>
<td>39</td>
<td>28</td>
<td>18</td>
<td>9</td>
</tr>
</tbody>
</table>

Answer the following questions:
1. The radius of tank 1 is 25 cm, the radius of tank 2 is 32 cm. One liter of water takes up 1000
cm³ of space. Determine the height of both tanks. Volume = __________

   Height of Tank 1: __________

   Height of Tank 2: __________

2. If the outlet valves are in the same position (center bottom of tank) and the same size, why
would tank 1 empty faster than tank 2 if they both hold 120 l of water? __________

3. How long did it take Tank 1 to empty? _________ Determine the average flow rate
   (divide volume by time, units are liters/min.). __________

4. Extrapolate the graph and determine how long it would take tank 2 to empty. __________
   Determine the average flow rate. __________

5. Interpolate: determine how much water was left in each tank after these time periods:
   a) 7 ½ minutes  
       Tank 1: __________  
       Tank 2: __________
   b) 23 ½ minutes  
       Tank 1: __________  
       Tank 2: __________

6. Interpolate: determine how long the tank has been emptying for if the there is this much
   water left in it:
   a) 95 liters  
       Tank 1: __________  
       Tank 2: __________
   b) 30 liters  
       Tank 1: __________  
       Tank 2: __________