MATH 205 – Calculus I **SQ 3.6**

Name: _____ Date: _____

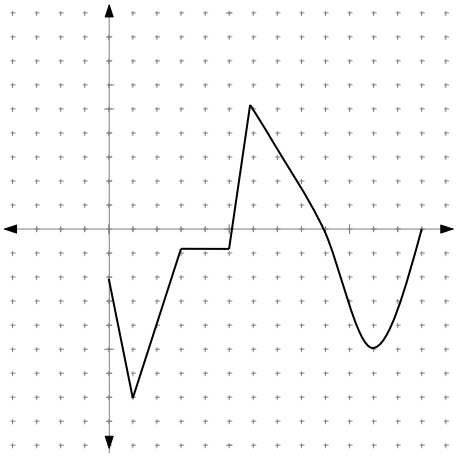
Instructions: Though calculators can be used for the entire daily question, all problems require you to show your work. Any answer without proper justification will receive ***ZERO*** credit. Only **EXACT** answers will receive full credit unless otherwise noted.

1. The position of a vehicle for any time, $t \geq 0$, is given by $s(t) = e^t \cos(t) - 5t^2 + 7$.

a) Determine the function that models the vehicle's velocity for $t \geq 0$.

b) Determine the function that models the vehicle's acceleration for $t \geq 0$.

2. Given the graph of a particle's ***VELOCITY*** (m/sec) at time *t* (secs), determine each of the following:.



This is the VELOCITY GRAPH!

It is not, I repeat, IS NOT, the position graph!

{Scale is 1 tick mark = 1 unit}

a) When is the particle moving to the left?

b) When is the particle moving to the right?

c) When is the particle at rest?

d) When is the particle slowing down?

e) When is particle speeding up?

f) When is the particle traveling at a constant velocity?

g) When is the speed of the particle the greatest?

h) When is the velocity of the particle the greatest?