Calculus Class Worksheet #2 Unit 4 _____

Answer each of the following questions. Express irrational solutions rounded to 3 significant figures.

1. A particle moving on a horizontal line will be s centimeters from a fixed point P on the line after t seconds where $s = f(t) = 0.5t^3 - t^2 - 1.5t$, $0 \leq t \leq 5$. (Note that if $s < 0$, then the particle is to the left of point P, and if $s > 0$, then the particle is to the right of point P.)

a. Express the velocity, v, and the acceleration, a, as a function of t.

v = _____ a = _____

b. When will the particle again be at point P? How fast will it be moving then?

c. When is the particle at rest? Where is the particle when it is at rest?

2. A particle moving on a horizontal line starts from rest at point P. Its acceleration, a, after t seconds is given by the equation $a = 6t - 8$ (cm/s^2), $0 \leq t \leq 5$.

a. Express the velocity, v, and the distance, s, that the particle is from point P, as a function of t.

v = _____ s = _____

b. When will the particle again be at point P? How fast will it be moving then?

c. When will the particle again be at rest? How far from point P is it then?