Math 180 – Fall 2012 Name: Solutions

Quiz 5

Write your answers on this page. Continue on the back if you need more space.

(10 pts) **1.** Suppose the position of an object moving horizontally after t seconds is given by the following function $s(t) = t^2 - 4t$; $0 \le t \le 5$.

(a) Find the velocity function.

$V(t) = s'(t) = 2t - 4$

(b) When is the object stationary, moving to the right, and moving to the left?

Stationary: Set $2t - 4 = 0 \Rightarrow 2t = 4 \Rightarrow t = 2$

Test $v(1) = 2 - 4 = -2 < 0 \Rightarrow v(t) < 0$ for $0 < t < 2$

Test $v(3) = 6 - 4 = 2 > 0 \Rightarrow v(t) > 0$ for $2 < t < 5$

So the object is moving to the left when $0 < t < 2$

" " " " " " right when $2 < t < 5$