

Problem 1

Suppose the position of a particle is given by

$$s = p(t) = \frac{9t}{t^2 + 9}$$

answer the following questions:

1) What is the velocity of the particle at $t = 1$?

2) When, if ever, is the object at rest?

3) When is the object moving forward?

4) When is the object moving backwards?

5) What is the acceleration at $t = 0$?

Problem 2

The sides of a square increase at a rate of $2 \frac{in}{sec}$. How fast is the area of the square increasing when the area is 4 in^2 ?