

Q1) If $f(t) = t^3 - 8t^2 + 24t$ is the position function of a moving particle, meter/sec.

a. Find the total distance traveled during the first 6 seconds.

b. When is the particle speeding up? When is it slowing down?

Q2) If $x^2 + y^2 + xy = 7$ and $dy/dt = 2$, find dx/dt when $x = 1$ and $y = 2$.