A charged particle ($m = 3$kg, $q = 1\mu$C) is launched at $t_0 = 0$ with initial speed $v_0 = 2$m/s in an electric field of magnitude $E = 6 \times 10^6$N/C as shown.
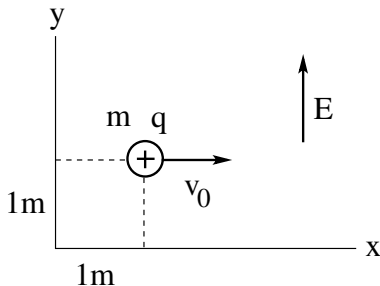
(a) Find the position of the particle at $t_1 = 3$s.

(b) By what angle does the velocity vector turn between $t_0 = 0$ and $t_1 = 3$s?

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