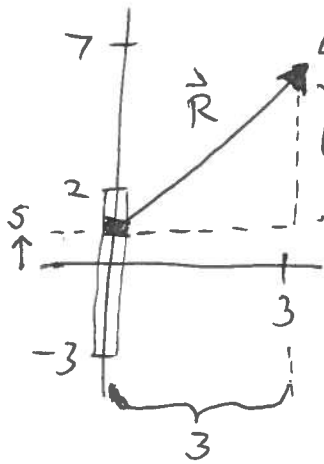


# 18 - line Charge Calculus

$$\vec{E} = k \int \lambda ds \frac{\vec{R}}{R^3}$$

## Problem A



$E_y = ?$  at field point. Source point at  $x=0, y=s$ .

$$R_x = 7 - s$$

$$R_y = 3$$

$$E_y = k \int \frac{\lambda ds R_y}{[R_x^2 + R_y^2]^{3/2}}$$

$$\rightarrow E_y = k \int_{-3}^2 \frac{(7-s) ds}{[3^2 + (7-s)^2]^{3/2}}$$