

Name: \_\_\_\_\_

**Problem 1** (10 points) Evaluate  $\int_C x ds$  where  $C$  is given by  $\mathbf{r}(t) = \langle 4t + 1, 3t \rangle$ ,  $0 \leq t \leq 1$ .

**Problem 2** (10 points) Evaluate  $\int_C x^2 dy$  where  $C$  is the arc of the curve  $x = y^3$  from  $(0,0)$  to  $(1,1)$ .