Each problem is worth 5 points. For full credit indicate clearly how you reached your answer.

1. Compute $\int_{C} \mathbf{F} \cdot d\mathbf{r}$ for $\mathbf{F}(x,y) = \langle 6xy, x+y \rangle$ and C is the line segment from (2,0) to (3,5).

2. Compute $\int_{C} \mathbf{F} \cdot d\mathbf{r}$ for $\mathbf{F}(x,y) = \langle 6xy, 3x^2 + 2y \rangle$ and C is the top half of a circle (centered at the origin) from (3,0) to (-3,0).