Problem Set 3   **Calculus 3**   **Due 10/11/05**

You are encouraged to work in groups of two to four on this assignment and make a single group submission. Each problem is worth 5 points. For full credit indicate clearly how you reached your answer. All work must be legible and submitted on clean paper without ragged edges.

1. Let $\mathbf{F}(x,y) = <a,b>$ for some constants a and b. Find $\oint_C \mathbf{F} \cdot d\mathbf{r}$ directly (without using the Fundamental Theorem for Line Integrals or Green's Theorem), where C is any circle.

2. Let $\mathbf{F}(x,y) = <a,b>$ for some constants a and b. Find $\oint_C \mathbf{F} \cdot d\mathbf{r}$ using the Fundamental Theorem for Line Integrals, where C is any circle.