

**Quiz 4      Calculus 3      11/13/17**

Each problem is worth 5 points. Clear and complete justification is required for full credit.

1. Compute  $\int_C \vec{F} \cdot d\vec{r}$  for the vector field  $\vec{F}(x, y) = xy\vec{i} - y\vec{j}$  and with  $C$  a line segment from  $(1, 2)$  to  $(4, -3)$ .

2. Compute  $\int_C \vec{F} \cdot d\vec{r}$  for the vector field  $\vec{F}(x, y) = \langle 5x^4 y^2, 2x^5 y \rangle$  and with  $C$  the counterclockwise arc of a circle beginning at  $(0,0)$  and ending at  $(\sqrt{2}, \sqrt{2})$ .