Quiz 2 Calculus 3 11/16/15

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

1. Let $\mathbf{F}(x,y) = \langle 5x^4y^2, 2x^5 y\rangle$, and C be the line segment from (2,–1) to (1,3).
   Compute $\int_C \mathbf{F} \cdot d\mathbf{r}$.

Yes, there's a second problem on the back!

2. Let $\mathbf{F}(x,y) = \langle 4x - 1, y - x^2 \rangle$. Compute $\int_C \mathbf{F} \cdot d\mathbf{r}$ for C the second-quadrant portion of a circle with radius 3 centered at the origin, traversed counterclockwise.