Find the parametric form of the curves $C_1$, $C_2$, and $C_3$ in problems 1.-3..

1. The curve $C_1$ is the line going from $(0, 0)$ to $(1, 0)$.

2. The curve $C_2$ is the line going from $(1, 0)$ to $(1, 2)$.

3. The curve $C_3$ is the line going from $(1, 2)$ to $(0, 0)$. 
4. Calculate \( \int_C x^2y \, dx + x \, dy \) where \( C \) is the curve going around the triangular path from \((0, 0)\) to \((1, 0)\) to \((1, 2)\) to \((0, 0)\) in a counter clockwise direction.