CS1231 Review 5

1. Determine whether the following are true or false.

   - $\forall x \in \mathbb{R} \forall y \in \mathbb{R}(x + y = 0)$.
   - $\exists x \in \mathbb{R} \exists y \in \mathbb{R}(x^2 + y^2 = 0)$.
   - $\forall x \in \mathbb{R} \exists y \in \mathbb{R}(x + y = 0)$.
   - $\exists y \in \mathbb{R} \forall x \in \mathbb{R}(x + y = 0)$.
   - $\forall x \in \mathbb{R} \exists y \in \mathbb{R}(xy = 1)$.
   - $\exists y \in \mathbb{R} \forall x \in \mathbb{R}(xy = 0)$.

2. Let $L(x, y)$ be "x loves y". Use Quantifiers to Express "Nobody loves everybody".