Problem Purpose
This problem will help you determine whether you have mastered the learning objectives for this unit.

Problem Statement
The gas phase reaction $2 \text{NO} + 5 \text{H}_2 \rightarrow 2 \text{NH}_3 + 2 \text{H}_2\text{O}$ takes place in a system that initially contained 2 moles of $\text{H}_2$ and 1 mole of $\text{NO}$. If 50% of the limiting reagent is converted, what will the mole fraction of ammonia equal?