## Question:

How many moles of NH3 can be produced from 28.0 mol of H 2 and excess N 2 ?
Solution
$\mathrm{N}_{2}+3 \mathrm{H}_{2} \rightarrow 2 \mathrm{NH}_{3}$
$\frac{1}{3} \mathrm{~N}_{2}+\mathrm{H}_{2} \rightarrow \frac{2}{3} \mathrm{NH}_{3}$
This equation shows that we get $\frac{2}{3}$ moles of $\mathrm{NH}_{3}$ from every mole of $\mathrm{H}_{2}$. Hence, if we have 28 moles of $H_{2}, \frac{2}{3} * 28=18 \frac{2}{3}$ moles of $\mathrm{NH}_{3}$.

Answer: 18,667 moles.

