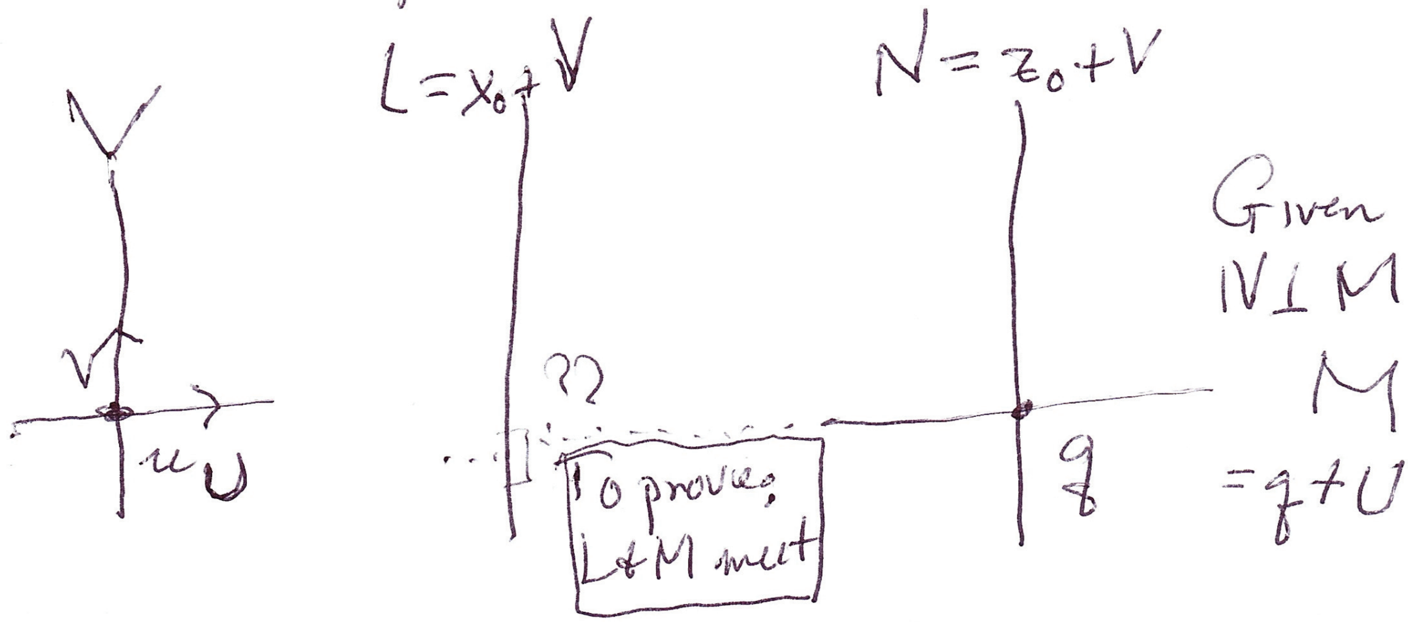
Prop. III 1.6 for case of $\mathbb{R}^2$



Then $N = q + V$

Want to show L & M have pt. in common. Can describe such a point two ways

$p = x_0 + av$ in L $\quad$ $p = q + cu$ in M $\quad$ Some a, c, 2B determined

u & v are linearly independent ⇒ basis $\mathbb{R}^2$

So need to solve $x_0 - q = cu - av$

for a & b. Can do since $u \perp v$ (see above)

$L \perp M$ now because $v \perp u$.