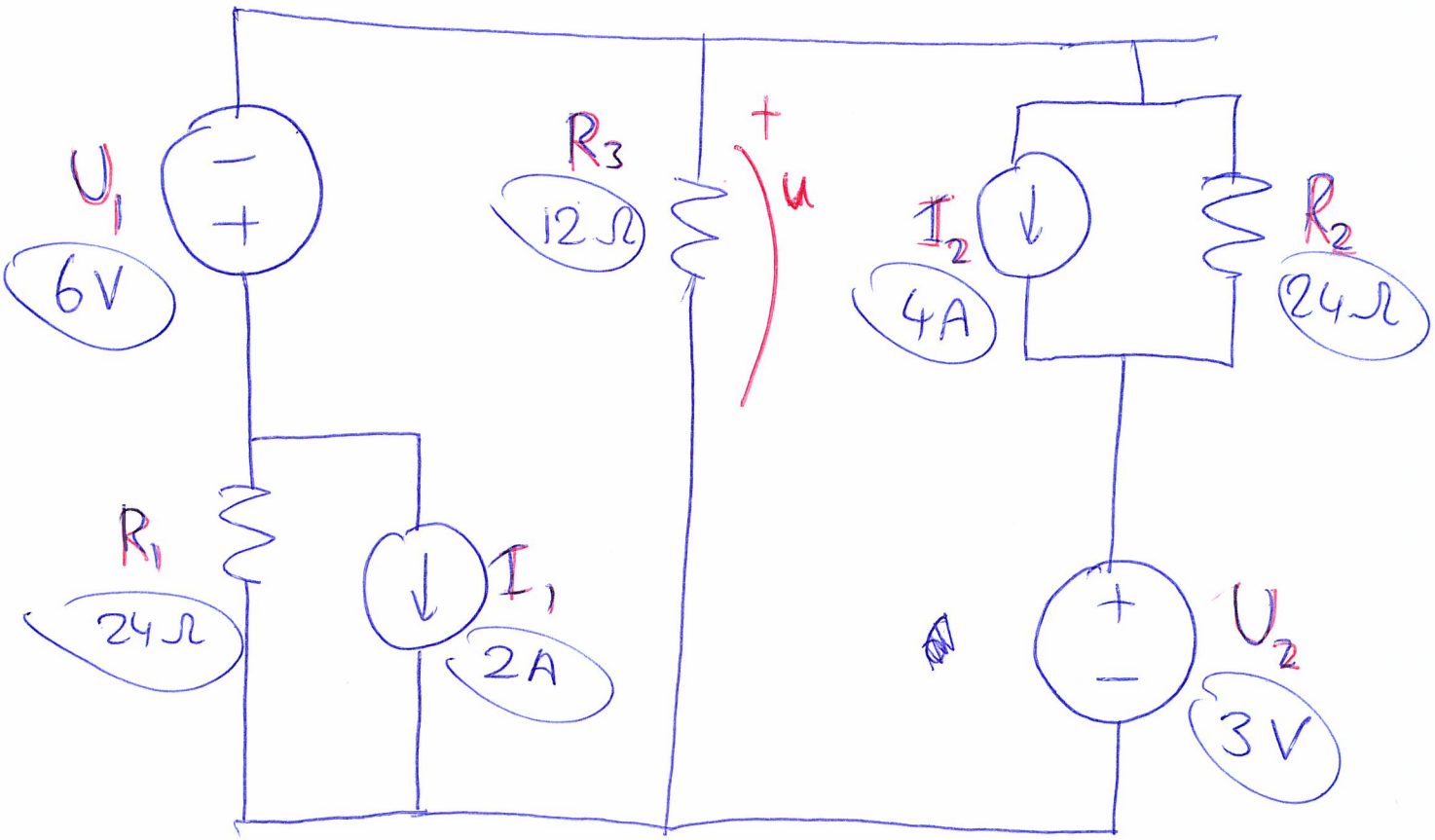
Tutorial Questions: Superposition.

[Q1 follows on next page]



Use superposition to find u.

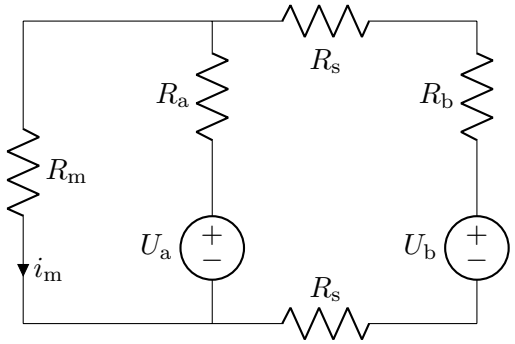
Try <u>two</u> states: ① U_1 & U_2 active, I_1 & I_2 zeroed

② I_1 & I_2 active, U_1 & U_2 zeroed

[On the way you will have a chance to practise a nodal equation (KCL) in state ①, and current division in state ②]

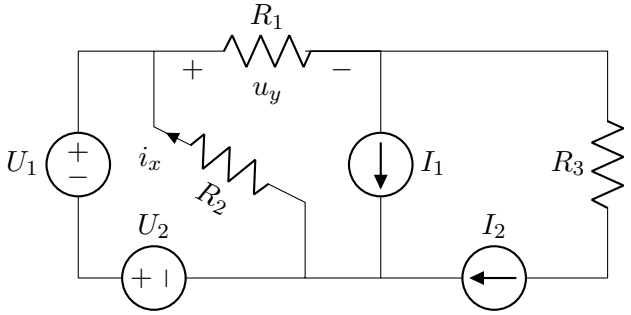
2. Two voltage sources

Now have a go doing it by making simplifications (combining resistors, redrawing) and then using superposition.



3. A practice where superposition probably doesn't make it any easier!

Find the marked i_x and u_y, using superposition. Two 'groups' of sources are suggested: U_1 and U_2 active, then I_1 and I_2 active. Notice that this could actually be solved rather easily by basic simplification methods, without needing superposition: you can do that as a check. It's a practice at using superposition.



4. A dependent source

Find i_x by superposition.
For simplicity of equations, let's define R, and let $R_1 = R_2 = R_3 = R_4 = R$.