(9.12) A mineral ore contains cobalt and a maller amount of nickel. In order to determine the nickel concentration it must be separated from cobalt. Solvent extraction using 0.01 M 8-hydroxyquinoline in $CHCl_3$ is chosen. Which metal can be extracted from the other, and at what pH? Consider Figure 9.3 and connected text.

Figure 9.3 shows that nearly 100% of nickel can be extracted at pH 4.0. Only a trace of cobalt is extracted at that pH. It may be necessary to strip the separated organic phase into a new aqueous phase at a pH < 2, remove the stripped organic phase, add new organic phase, adjust pH to 4 again and repeat the extraction in order to get a clean separation of nickel from a large amount of cobalt.