

Show the arrow-pushing mechanisms for the following reactions, and describe the reaction as either acid-base or nucleophile-electrophile. Label all the reagent species as acids, bases, nucleophiles or electrophiles. If it's an acid-base reaction, use the pKa values from Table 3.1 in the textbook to calculate the equilibrium constants (pK_{eq} and K_{eq}) for these reactions. (Don't do this for part b – there is more involved here than pKas.)

