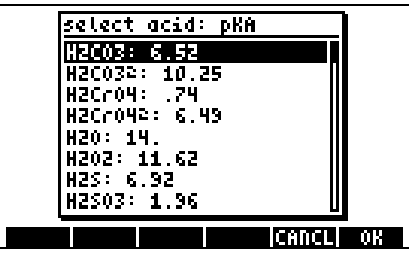
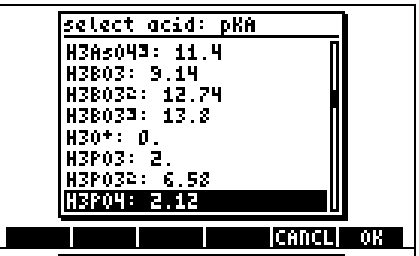
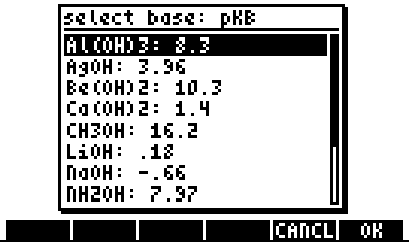
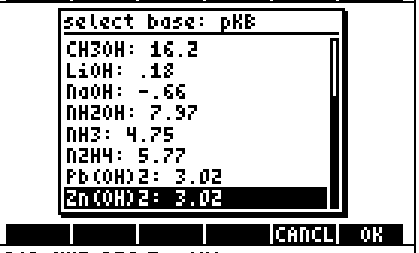
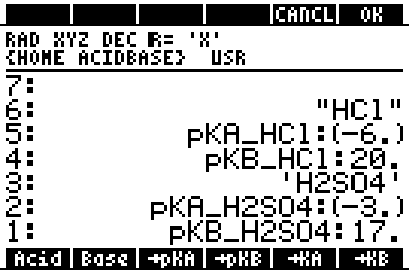
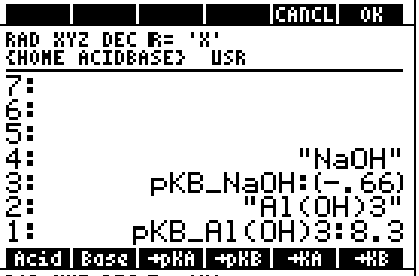
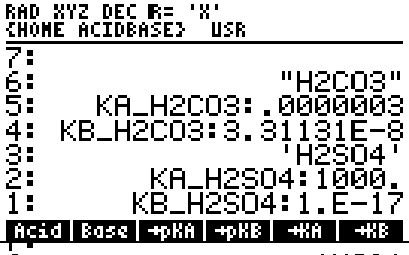
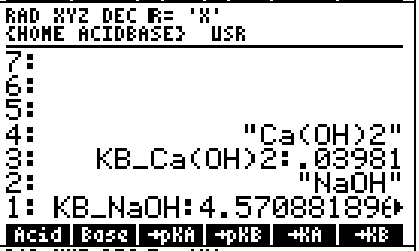
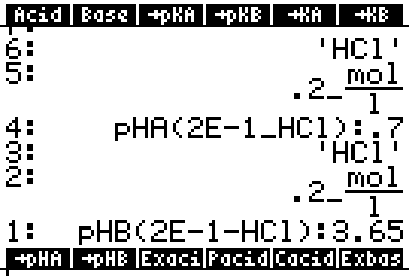
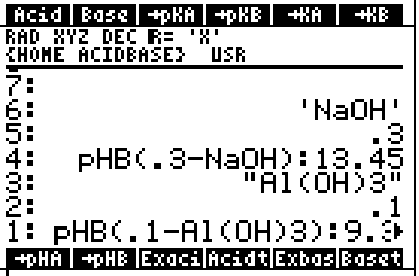
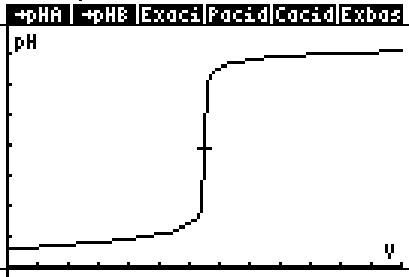
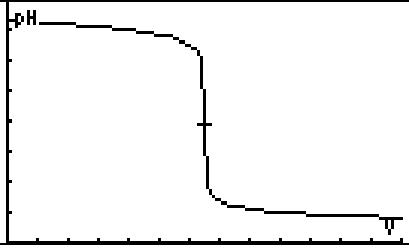
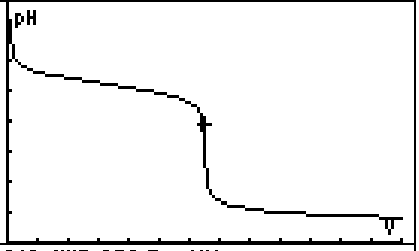
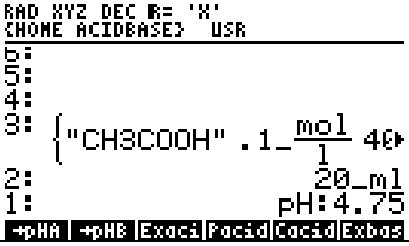
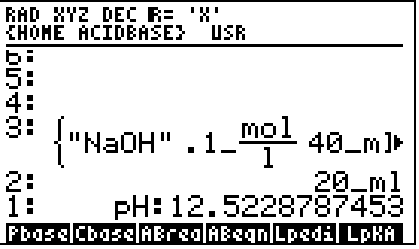
ACIDBASE

Acid: choose box with acids and pKA values (1s)		
Base: Choose box with bases and pKB values (1s)		
→pKA,B: acid to pKA,B value (0.1s) →pKB: base to pKB (0.1s)		
→KA,B: acid to KA value (0.1s) →KB: base to KB-value (0.1s)		
→pHA: pHA value (0.5s) →pHB: pHB value (0.5s)		
Pacidtit: plot acid titration {HCl .1mol/l 40_ml .1_mol/l} weak acid: {CH3COOH .1 40 .1} (14s)		
Pbasetit: plot base titration {NaOH .1 40. .1} (14s) {"NH4+" .1mol/l 40_ml .1_mol/l}		
Cacidtit: calculate acid titr. (1s) Cbasetit: calculate base titr. (1s)		

Abreact: choose acid base reaction	RAD {HOM 7: 6: 5: 4: 3: 2: 1: acid base reaction HCl→Cl⁻+H⁺ H2SO4→HSO4⁻+H⁺ HSO4⁻→SO4²⁻+H⁺ NH4⁺→NH3+H⁺ HNO3+H2O→NO3⁻+H3O⁺ H2O+NH3→OH⁻+NH4⁺ H2O→OH⁻+H⁺ H3O⁺→H2O+H⁺ CANCL OK	RAD {HOM 7: 6: 5: 4: 3: 2: 1: acid base reaction HSO4⁻→SO4²⁻+H⁺ H2SO3→HSO3⁻+H⁺ H3PO4→H2PO4⁻+H⁺ HF→F⁻+H⁺ HNO2→NO2⁻+H⁺ HCOOH→HCOO⁻+H⁺ CH3COOH→CH3COO⁻+H⁺ H3CO3→HCO3⁻+H⁺ CANCL OK
Abreact: choose acid base reaction after OK	RAD XYZ DEC R= 'X' {HOME ACIDBASE} USR 7: 6: 5: 4: 3: 2: "HCl→Cl⁻+H⁺" 1: "HNO2→NO2⁻+H⁺" Pbase Cbase ABreq ABeqn Lpedi LpKA	cH⁺ PROTON-CONCENTRATION(mol/l) f ACT.-COEFF.0<f≤1( ) K DISS.-CONST(mol/l) pKA,B pK-VALUE,ACID,BASE( ) x DISSOCIATION(mol/l) c0 SOL.CONC.(mol/l)" { 'pH=-LOG(aH⁺/1_mol/l)' 'aH⁺=fx cH⁺' 'pK=-LOG(K/1_mol/l)' 'x=-.5 ×K+√(.25×K^2+K×c0)' } { 'pH=0' ' aH⁺=0_mol/l' 'f=0' 'cH⁺=0_mol/l' 'pK=0' 'K=0_mol/l' 'x=0_mol/l' ' c0=0_mol/l' } } GRAPH OK
HelpACIDBASE: help	ACIDBASE: REACTIONS ACID→BASE+H⁺, H⁺=PROTON BASE: KEY IN BASE OR CONJ. ACID ACID='HCl','H2SO3'" BASE='NaOH','Al(OH)3'" Acid CHOOSE BOX ACID Base CHOOSE BOX BASE c=1_mol/l →pKA ACID → pKA pKA=-LOG(KA) →pKB BASE, CONJ. ACID → pKB GRAPH OK	pKB=-LOG(KB) pKA+pKB=14 →KA ACID → KA KA=c(base)×c(H⁺)/c(acid) →KB BASE, CONJ. ACID → KB KB=c(OH⁻)×c(acid)/c(base) →pHA ACID CONC.(mol/l) → pHA pH-VALUE →pHB BASE (CONJ.ACID) CONC.(mol/l) → pHB pH-VALUE Exacid EXAMPLE ACIDTITR {ACID cA_mol/l GRAPH OK
HelpACIDBASE: help	VA_ml cB_mol/l} Pacidtit { } → PLOT ACIDTITRATION FOR STRONG/WEAK ACID Cacidtit { } VB_ml → pH CALCULATE pH VALUE Exbase EXAMPLE BASETITR {CONJ.ACID cB VB cA} Pbasetit { } → PLOT BASETITRATION FOR STRONG/WEAK BASE Cbasetit { } VA_ml → pH CALCULATE pH VALUE HINT: FOR WEAK ACIDS(pH<4) AND GRAPH OK	HINT: FOR WEAK ACIDS(pH<4) AND WEAK BASES(pH>10) THE HENDERSON- HASSELBALCH EQN IS USED. ACID: pH=pKA+LOG(cB/cA). BASE: (cA/cB) ABreact CHOOSE ACIDBASE REACTION FROM LIST LABre ABeqn MATH EQNS FOR ACID BASE Lpedit EDIT,VIEW LPKA/B PRESS [CONT] AFTER EDIT LpKA LIST OF ACIDS WITH pKA LpKB LIST OF BASES WITH pKB GRAPH OK