

## Chapter 14 Practice Problem Solutions

(P14.3)

The van laar is programmed below. A plot is shown on the following page. Then  $x_1$  is adjusted in the two rows with shaded activities using an objective cells for each component given by the ratio of the activities. The compositions are adjusted in each row to make the activity ratio for act = 1, subject to the activity ratio for act2 = 1.

$x_1$	$x_2$	ideal	excess	Gm/RT	gamma1	gamma2	act1	act2
0	1	0	0	0	4.78746	1	0	1
0.05	0.95	-0.19852	0.07665	-0.1219	4.4851	1.0017	0.2243	0.9516
0.1	0.9	-0.32508	0.14980	-0.1753	4.1910	1.0073	0.4191	0.9065
0.15	0.85	-0.42271	0.21910	-0.2036	3.9058	1.0175	0.5859	0.8649
0.2	0.8	-0.5004	0.28417	-0.2162	3.6299	1.0335	0.7260	0.8268
0.25	0.75	-0.56234	0.34457	-0.2178	3.3639	1.0566	0.8410	0.7925
0.332562	0.667438	-0.63598	0.43271	-0.2033	2.9478	1.1159	0.9803	0.7448
0.35	0.65	-0.64745	0.44927	-0.1982	2.8638	1.1327	1.0023	0.7363
0.4	0.6	-0.67301	0.49231	-0.1807	2.6308	1.1920	1.0523	0.7152
0.45	0.55	-0.68814	0.52815	-0.1600	2.4100	1.2720	1.0845	0.6996
0.5	0.5	-0.69315	0.55589	-0.1373	2.2019	1.3805	1.1009	0.6903
0.55	0.45	-0.68814	0.57445	-0.1137	2.0069	1.5298	1.1038	0.6884
0.6	0.4	-0.67301	0.58258	-0.0904	1.8258	1.7392	1.0955	0.6957
0.65	0.35	-0.64745	0.57876	-0.0687	1.6591	2.0409	1.0784	0.7143
0.7	0.3	-0.61086	0.56120	-0.0497	1.5075	2.4917	1.0552	0.7475
0.75	0.25	-0.56234	0.52771	-0.0346	1.3718	3.1977	1.0289	0.7994
0.8	0.2	-0.5004	0.47559	-0.0248	1.2532	4.3720	1.0025	0.8744
0.85	0.15	-0.42271	0.40152	-0.0212	1.1531	6.4841	0.9802	0.9726
0.9	0.1	-0.32508	0.30135	-0.0237	1.0742	10.6883	0.9668	1.0688
0.974976	0.025024	-0.11699	0.09025	-0.0267	1.0055	29.7630	0.9803	0.7448
1	0	0	0	0	1	46.20093	1	0

