PSYCHOLOGY 590 – INTRO TO FACTOR ANALYSIS & STRUCTURAL EQUATION MODELS Bob McFatter *Assignment No. 1*

Use Excel's Solver tool to iteratively estimate the parameters of Spearman's g factor model shown in Figure 1.14 of Loehlin (p. 18, and shown below) for the four observed variables, C, E, M, and P. That is, find values of c, e, m, and p that minimize the sum of the squared differences between the six observed correlations and the correlations implied by the model. Try several different sets of starting values, e.g., 1, 1, 1, 1, or even an impossible set like 5, 5, 5, 5. Note whether the different sets of starting values converge to the same solution. Look at your values for c, e, m, and p to at least 4 decimals and notice how close they are to those obtained by Loehlin who used the method of triads. Loehlin's values were .97, .84, .73, and .65, respectively.



The observed correlation matrix is as follows:

	С	Е	Μ	Р
С	1	0.78	0.7	0.66
E	0.78	1	0.64	0.54
Μ	0.7	0.64	1	0.45
Р	0.66	0.54	0.45	1