Example 1: Product mix problem with diminishing profit margin.

Your company manufactures TVs, stereos and speakers, using a common parts inventory of power supplies, speaker cones, etc. Parts are in limited supply and you must determine the most profitable mix of products to build. But your profit per unit built decreases with volume because extra price incentives are needed to load the distribution channel.

			TV set	*Stereo*	*Speaker*
		Number to Build->	100	100	100
Part Name	*Inventory*	*No. Used*			
Chassis	450	200	1	1	0
Picture Tube	250	100	1	0	0
Speaker Cone	800	500	2	2	1
Power Supply	450	200	1	1	0
Electronics	600	400	2	1	1

Diminishing Returns Exponent: 0.9

Profits:

By Product	$4,732	$3,155	$2,208
Total	**$10,095**		