variables										AIC
trt	sex	race	pburn	bhd	bbut	btor	bupleg	blowleg	bresp	439.470
trt	sex	race	pburn	bhd	bbut	btor	bupleg	blowleg		437.479
trt	sex	race	pburn		bbut	btor	bupleg	blowleg		435.540
trt	sex	race	pburn		bbut		bupleg	blowleg		433.677
trt	sex	race			bbut		bupleg	blowleg		431.952
trt	sex	race			bbut		bupleg			430.281
trt	sex	race			bbut					429.617
trt	sex	race								428.708
trt		race								429.704
		race								431.795

1) Data from Klein and Moeschberger (1997, p. 7) is on severely burned patients. The response variable is *time* until infection. Predictors include *treatment* (0-routine bathing 1-Body cleansing), *sex* (0=male 1=female), *race* (0=nonwhite 1=white), *pburn* = percent of body burned. The remaining variables are burn cite indicators. For example, *bhd* is head (1 yes 0 no). Results from backward elimination are shown.

a) What is the minimum AIC submodel I_{min}?

b) What is the best starting submodel I_I?

c) Are there any other candidate submodels? Explain briefly.

	M1	M2	M3	M4
# of predictors	10	3	2	1
# with $0.01 \leq$ p-value ≤ 0.05	2	2	1	1
# with p-value > 0.05	8	1	0	0
$-2\log(L)$	419.470	422.708	425.704	429.795
$AIC(I)$	439.470	428.708	429.704	431.795
p-value for change in PLR test	1.0	0.862	0.304	0.325

2) The above table gives summary statistics for 4 PH regression models considered as final submodels after performing variable selection. Assume that the PH assumptions hold for all 4 models. The full model was M1, and M2 was the minimum AIC model found. Which model should be considered as the first starting submodel I_I? Explain briefly why each of the other 3 submodels should not be used as the starting submodel.