1. With the data on y and x_1, x_2, x_3 you created, use SAS to practice backward elimination, stepwise, to list studenized residuals, stidentized deleted residuals and identify outliers.

2. Suppose MSE= 12.3950 and

obs	y	P	R	H	STUDENT	PRESS	RSTUDENT
1	16	_____	-0.7420	0.1473	_____	_____	-0.2158
$\vdots$	$\vdots$	$\vdots$	$\vdots$	$\vdots$	$\vdots$	$\vdots$	$\vdots$

(1) Find the missing values in Obs 1.

$\widehat{e}_1 = y_1 - \widehat{y}_1 \implies -0.7240 = 16 - \widehat{y}_1 \implies P = \widehat{y}_1 = 16.7420.$

$t_1 = \dfrac{\widehat{e}_1}{\sqrt{(1-h_{11})\,MSE}} = \dfrac{-0.7420}{\sqrt{(1-0.1473)\cdot 12.3950}} = -0.2282 \implies \text{STUDENT} = -0.2282.$

$\widehat{e}_{1(1)} = \dfrac{\widehat{e}_1}{1-h_{11}} = \dfrac{-0.7420}{1-0.1473} = -0.8702 \implies \text{PRESS} = -0.8702.$

(2) Find $\text{MSE}_{(1)}$.

$t_{(1)} = \dfrac{\widehat{e}_1}{\sqrt{(1-h_{11})\,MSE_{(1)}}} \implies -0.2158 = \dfrac{-0.7420}{\sqrt{(1-0.1473)\,MSE_{(1)}}} \implies MSE_{(1)} = 15.2448.$