

Name: \_\_\_\_\_ ID#: \_\_\_\_\_ Section#: 1 2 Serial#: \_\_\_\_\_

**Fill the FINAL answers in the blanks**

Using the Minitab output below, answer the questions that follow:

**Regression Analysis: Sales versus MonthN; Advertis; Agent**

The regression equation is  
Sales = 340 + 13.0 MonthN - 0.711 Advertis - 107 Agent

Predictor	Coef	SE Coef	T	P	VIF
Constant	339.53	19.88	17.08	0.000	
MonthN	12.986	1.301	9.98	0.000	1.0
Advertis	-0.7111	0.5174	-1.37	0.185	1.2
Agent	-106.836	9.869	-10.83	0.000	1.2

S = 21.8950 R-Sq = 92.8% R-Sq(adj) = 91.7%

Analysis of Variance

Source	DF	SS	MS	F	P
Regression	3	123857	41286	86.12	0.000
Residual Error	20	9588	479		
Total	23	133445			

Source	DF	Seq SS
MonthN	1	46902
Advertis	1	20773
Agent	1	56182

Durbin-Watson statistic = 0.828965

Predicted Values for New Observations

New Obs	Fit	SE Fit	95% CI	95% PI
1	316.96	13.01	(289.81; 344.11)	(263.83; 370.09)

Values of Predictors for New Observations

New Obs	MonthN	Advertis	Agent
1	1.00	50.0	0.000000

**Correlations: MonthN; Sales; Advertis; Agent**

	MonthN	Sales	Advertis
Sales	0.593 0.002		
Advertis	0.091 0.671	-0.339 0.105	
Agent	0.000 1.000	-0.755 0.000	0.422 0.040

Cell Contents: Pearson correlation  
P-Value

**Stepwise Regression: Sales versus MonthN; Advertis; Agent**

Alpha-to-Enter: 0.15 Alpha-to-Remove: 0.15

Response is Sales on 3 predictors, with N = 24

Step	1	2

Constant	399.6	316.3
Agent	-112.6	-112.6
T-Value	-5.40	-12.34
P-Value	0.000	0.000
MonthN		12.8
T-Value		9.69
P-Value		0.000
S	51.1	22.4
R-Sq	56.99	92.14
R-Sq(adj)	55.03	91.39
Mallows C-p	99.7	3.9

**Best Subsets Regression: Sales versus MonthN; Advertis; Agent**

Response is Sales

Vars	R-Sq	R-Sq(adj)	Mallows C-p	S	h i n
1	57.0	55.0	99.7	51.077	X
1	35.1	32.2	160.5	62.720	X
2	92.1	91.4	3.9	22.353	X X
2	57.0	52.9	101.6	52.249	X X
3	92.8	91.7	4.0	21.895	X X X

1. The number of independent variables is 3.
2. The independent variable that is directly correlated with the dependent variable is MonthN.
3. The independent variable that is not significant in the regression model is Advertis.
4. The independent variable that has the least multicollinearity is MonthN.
5. Using the best subset regression the best group of independents is All of them and has a value of Mallows C-p = 4.

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*With My Best Wishes*

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Response is Sales

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1. The percentage of variation in the dep. variable that is explained by the indep. variables is 92.8%.
2. Testing the linear relationship between the dep. and the indep. variables has a test statistic = 86.12.
3. The variance of the variation of the dependent variable about the regression plane is 479.
4. Testing the correlation between *Sales* and *Advertis* variables has a p-value = 0.105.
5. Using the stepwise regression the final group of independents is Agent and MonthN and has a value of Mallows C-p = 3.9.

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*With My Best Wishes*