INTRODUCTORY STATISTICS TEST NUMBER 8

The Phillips curve in modern macroeconomics postulates a negative relationship between the inflation rate and the rate of unemployment. Some relevant data pertaining to Canada are presented on the next page.

Is there a significant negative relationship between the inflation rate and the unemployment rate for Canada during the period 1985 to 1998? In constructing your answer, calculate the R^2, the total sum of squares, the sum of squares due to regression, the residual sum of squares, and the mean squared error.

IMF INTERNATIONAL FINANCIAL STATISTICS FROM CHASS DATA CENTER

156/64 CANADA / CONSUMER PRICES (Index number)
156/67R CANADA / UNEMPLOYMENT RATE (Percent per annum)

DATE	CPI	UEM	INF	DUEM	DINF	DUEMSQ	DINFSQ	DUEM x DINF
1984	69.2							
1985	71.9	10.50	3.95	1.04	0.97	1.08	0.94	1.01
1986	74.9	9.60	4.17	0.14	1.19	0.02	1.43	0.17
1987	78.2	8.90	4.36	-0.56	1.38	0.31	1.92	-0.78
1988	81.3	7.80	4.02	-1.66	1.04	2.76	1.09	-1.73
1989	85.4	7.50	4.99	-1.96	2.01	3.84	4.06	-3.95
1990	89.5	8.10	4.76	-1.36	1.78	1.85	3.19	-2.43
1991	94.5	10.40	5.62	0.94	2.64	0.88	6.94	2.48
1992	95.9	11.30	1.51	1.84	-1.47	3.39	2.17	-2.71
1993	97.7	11.20	1.84	1.74	-1.14	3.03	1.30	-1.98
1994	97.9	10.40	0.19	0.94	-2.79	0.88	7.81	-2.63
1995	100.0	9.55	2.17	0.09	-0.81	0.01	0.66	-0.07
1996	101.6	9.70	1.57	0.24	-1.41	0.06	1.97	-0.34
1997	103.2	9.22	1.62	-0.24	-1.36	0.06	1.84	0.33
1998	104.2	8.34	0.99	-1.12	-1.99	1.25	3.97	2.23
SUM		132.51	41.77	0.00	0.00	19.42	39.29	-10.40
MEAN		9.46	2.98					

CPI = CONSUMER PRICE INDEX
INF = (CPI(t) - CPI(t-1))/CPI(t-1)
UEM = UNEMPLOYMENT RATE
DINF = INF - MEAN(INF)
DUEM = UEM - MEAN(UEM)
DUEMSQ = DUEM SQUARED
DINFSQ = DINF SQUARED
DUEM x
DINF = DUEM TIMES DINF