Hypothesis Test for the PMCC Test Statistic

1. Calculate the test statistic for the following data pairs

a.

X	0.8	0.6	0.4	0.5	0.2	0.8	0.7	0.9	0.1
Y	0.8	0.7	0.6	0.5	0.1	0.9	0.8	1.0	0.0

b.

X	12	45	78	89	56	23	30	51	84	76	43	10	58
Y	18	56	61	94	42	21	35	56	72	43	51	12	68

c.

X	15.8	16.9	14.7	15.2	13.8	14.2
Y	19.3	19.5	18.6	19.5	18.4	18.2

d.

X	8	5	6	4	5	8	9	6	5	3	2
Y	2	8	5	8	6	3	1	4	7	8	9

2. The data in the following table relates the average temperature (in degrees Celsius) and the average butterfat content for a group of cows (expressed as a percentage of the milk)

Temp	27	26	27	19	18	29	26	16	17	26
Butterfat	9.63	9.87	9.33	8.99	9.69	9.63	9.63	9.93	9.66	9.60

Calculate the test statistic for these data

3. A survey of common garden birds in Great Britain gave figures for each species, comparing the total number recorded with the percentage of gardens where each species was seen. The figures for nine species are given in the following table

No. Recorded (000s)	642	583	148	286	635	601	550	410	36
% of gardens	40.9	53.0	27.4	39.3	64.8	67.0	30.2	32.4	66.0

Calculate the test statistic for these data

4. The following table gives the numbers of households living in their own properties, and the number that are not doing so (both in thousands) for selected regions on East Anglia

Region	Owner-occupied	Other
Southend	31.6	19.4
Colechester	46.1	19.6
Kings Lynn	41.8	16.3
St Albans	40.6	12.1
Ipswich	32.4	19.3
Camebridge	22.8	19.8
Hertsmere	28.3	9.4
Harlow	19.8	13.4
Brentwood	22.8	6.0
Maldon	19.3	4.9

Calculate the test statistic for these data