

Assignment 3

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1 Question 3

The grades have been organized into equal bins with a width of 1, and grade C is positioned at the center. By examining the table, we can observe that.

X point	Grades	f(x)	E	O	$(O - E)^2$	$(O - E)^2/E$
2	A	0.054	32.3946	77	1989.6417	61.4189
1	B	0.242	145.1824	150	23.2093	0.1599
0	C	0.3989	239.3654	210	862.3267	3.6026
1	D	0.242	145.1824	125	407.3293	2.8056
2	F	0.054	32.3946	38	31.4205	0.9699

The χ^2 value was obtained to be 68.9569 for 4 degrees of freedom (see attached google sheet for the calculation). So, from the table given in the lecture slide, the critical value of the χ^2 is 9.488 at 5 % Level of significance and 7.779 at 10% Level of significance. So, the observed χ^2 is much greater than both of the critical value. So, we have enough evidence to reject the hypothesis and say that the results are biased.

2 Question 4