Computing Assignment 3

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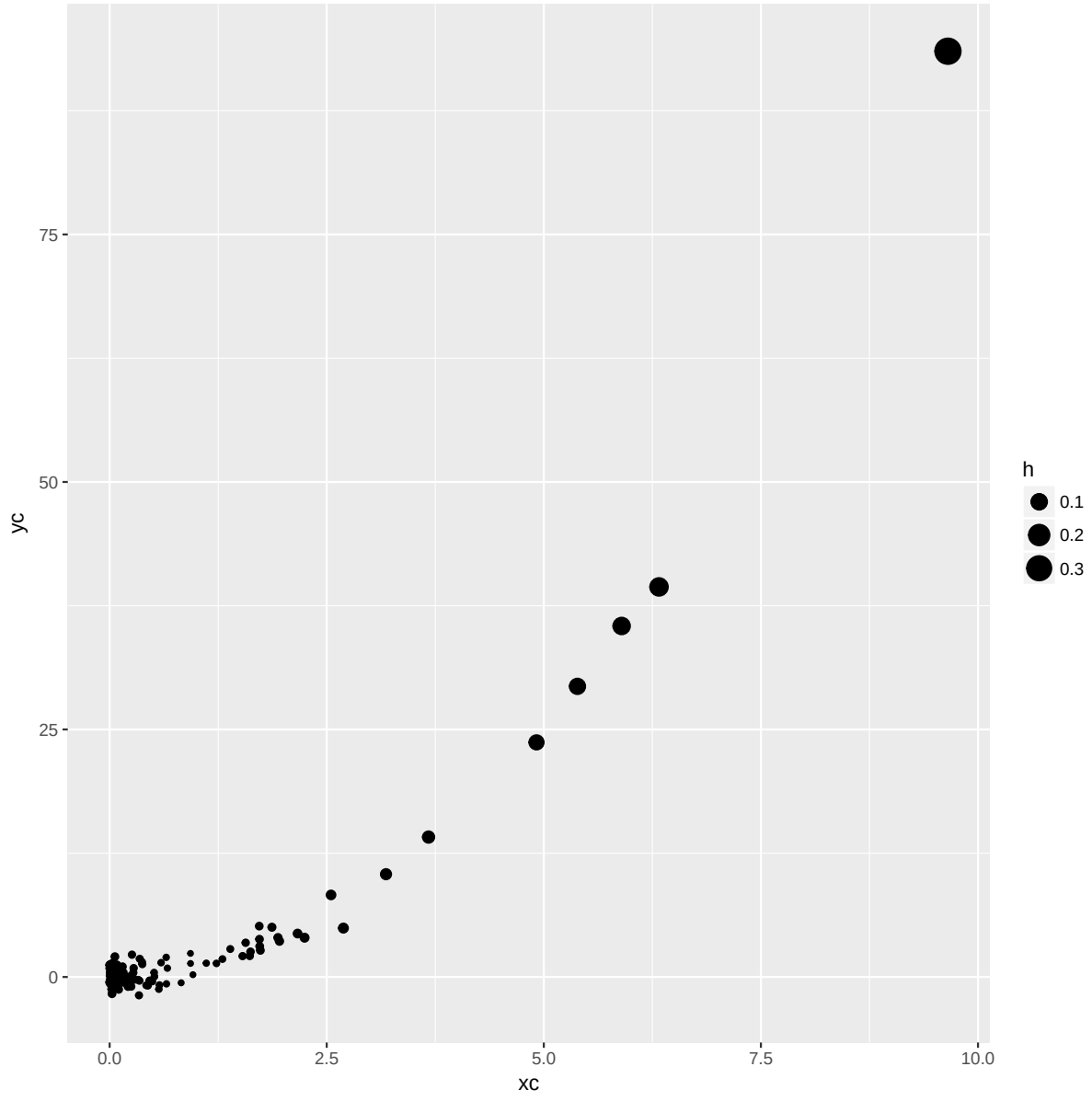
Scatter plot of y as the square of a chi-squared random variable



Notes:

1. See that the cluster of points at the left are all small–because each individual point carries comparatively little information about the fit line, they have low leverage.
2. By contrast, the points out to the right are sparse, and thus large. The location of these points greatly affects the slope of the best fit line.

High heteroskedasticity DGP

Table 1:

Statistic	N	Mean	St. Dev.	Min	Max
beta	100	0.985	0.574	−0.531	2.663
homo_se	100	0.438	0.060	0.298	0.587
homo_t	100	1.000	0.000	1	1
homo_p	100	0.837	0.000	0.837	0.837
sandwich_se	100	0.450	0.208	0.121	1.247
sandwich_t	100	2.791	2.298	−1.940	11.978
sandwich_p	100	0.903	0.173	0.031	1.000
omega_se	100	0.600	0.000	0.600	0.600
omega_t	100	1.644	0.958	−0.885	4.441
omega_p	100	0.877	0.167	0.192	1.000

Low heteroskedasticity DGP

Table 2:

Statistic	N	Mean	St. Dev.	Min	Max
beta	100	0.967	0.641	−1.137	2.551
homo_se	100	0.605	0.075	0.456	0.812
homo_t	100	1.000	0.000	1	1
homo_p	100	0.837	0.000	0.837	0.837
sandwich_se	100	0.465	0.209	0.183	1.269
sandwich_t	100	2.425	1.871	−1.935	10.145
sandwich_p	100	0.895	0.197	0.031	1.000
omega_se	100	0.600	0.000	0.600	0.600
omega_t	100	1.613	1.070	−1.897	4.254
omega_p	100	0.868	0.186	0.034	1.000