

**Normal Approximation to Sample Data**

If a large sample of scores is approximately normally distributed, the normal distribution can be used to describe (or place marks in) this distribution.

Pearson's "Father" Data

height (inches)	cumulative freqs	perc	z	normal approx
59	0	0.00	-3.16	0.08
60	4	0.37	-2.80	0.26
61	9	0.83	-2.44	0.74
62	20	1.86	-2.07	1.91
63	49	4.55	-1.71	4.39
64	97	9.00	-1.34	8.96
65	185	17.16	-0.98	16.38
66	305	28.29	-0.61	26.94
67	429	39.80	-0.25	40.12
68	581	53.90	0.11	54.54
69	724	67.16	0.48	68.38
70	856	79.41	0.84	80.03
71	949	88.03	1.21	88.63
72	1008	93.51	1.57	94.19
73	1057	98.05	1.94	97.35
74	1071	99.35	2.30	98.93
75	1076	99.81	2.66	99.61
76	1078	100.00	3.03	99.88

columns in this table:

height (inches) - measured height in inches

cumulative frequencies - how many men were at or below this height

cumulative percentages - percentage of men who were at or below this height

z - the z-score (calculated from the sample mean and sample sd)

normal approximation - percentage of values falling below z in a normal distr.

actual deciles:

10%	20%	30%	40%	50%	60%	70%	80%	90%
64.30	65.39	66.08	67.05	67.77	68.44	69.17	70.04	71.29

actual quartiles:

25%	50%	75%
65.79	67.77	69.60

space for doing some calculations:

### Heights of 1078 Fathers

