

day	temp °C
4/1/2008	11
4/2/2008	10
4/3/2008	10
4/4/2008	9
4/5/2008	8
4/6/2008	7
4/7/2008	8
4/8/2008	9
4/9/2008	4
4/10/2008	9
4/11/2008	8
4/12/2008	7
4/13/2008	8
4/14/2008	9
4/15/2008	12
4/16/2008	13
4/17/2008	15
4/18/2008	11
4/19/2008	12
4/20/2008	10
4/21/2008	9
4/22/2008	8
4/23/2008	9
4/24/2008	11
4/25/2008	10
4/26/2008	9
4/27/2008	6
4/28/2008	6
4/29/2008	7
4/30/2008	12

with EXCEL functions

N=		=count
average month temperature=		=average
minimum=		=min
maximum=		=max
range=		=max - =min
modus=		=mode
median=		=median
sample variance=		=var
sample standard deviation=		=stdev

"manually" with math formulas in EXCEL

**AVERAGE (MEAN)**

$$\bar{x} = \frac{\sum_{i=1}^N X_i}{N}$$

**VARIANCE (sample)**

$$s^2 = \frac{\sum_{i=1}^n (X_i - \bar{X})^2}{n-1}$$

**sample standard deviation**

$$s = \sqrt{s^2}$$

body weight

men	women
82	57
87	62
93	58
74	71
68	49
81	56
80	60
67	53
104	71
69	64
75	58
71	49
81	68
96	61
89	54
79	57
109	60
87	47
63	58
75	61
77	67
64	54
59	47
81	64
70	76
69	63
86	67
80	52
81	
91	

men women

count  
arit. average  
max  
min  
modus  
**median**  
variance (population)  
variance (sample)  
stand. dev. (population)  
stand. dev. (sample)

N  
min  
0.25 percentile  
**0.5 percentile**  
0.75 percentile  
max

**histogram**

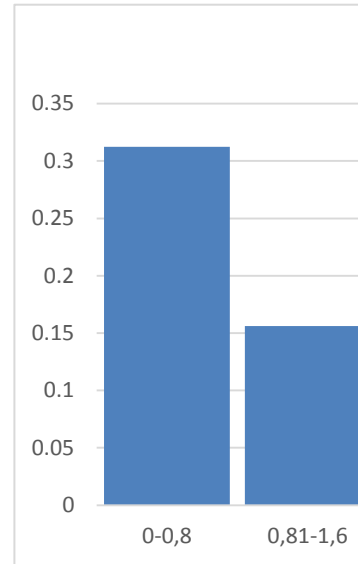
length in inches	2.54
	conversion (cm)
0.4	1.016
0.33	0.8382
1.37	3.4798
0.68	1.7272
0.61	1.5494
0.06	0.1524
1.76	4.4704
0.75	1.905
1.91	4.8514
0.72	1.8288
0.79	2.0066
1.28	3.2512
0.6	1.524
0.14	0.3556
0.02	0.0508
1.2	3.048
1.37	3.4798
0.27	0.6858
1.27	3.2258
1.01	2.5654
0.22	0.5588
0.72	1.8288
1.37	3.4798
0.22	0.5588
0.52	1.3208
0.09	0.2286
1.7	4.318
0.83	2.1082
0.25	0.635
1.41	3.5814
0.23	0.5842
0.14	0.3556

count	32
average	1.92405
max	4.8514
min	0.0508
modus	3.4798
<b>median</b>	1.778
variance (population)	1.932778
variance (sample)	1.995126
stand. dev. (population)	1.390244
stand. dev. (sample)	1.412489
0.9 percentile	3.57124
0.5 percentile	1.778
0.1 percentile	0.3556

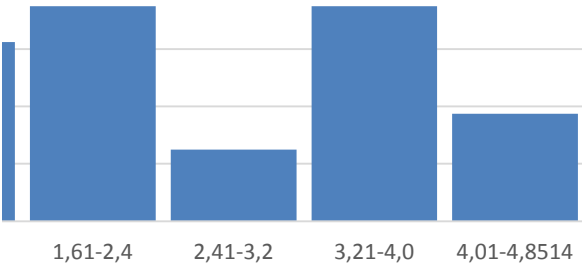


*Fagus sylvatica*

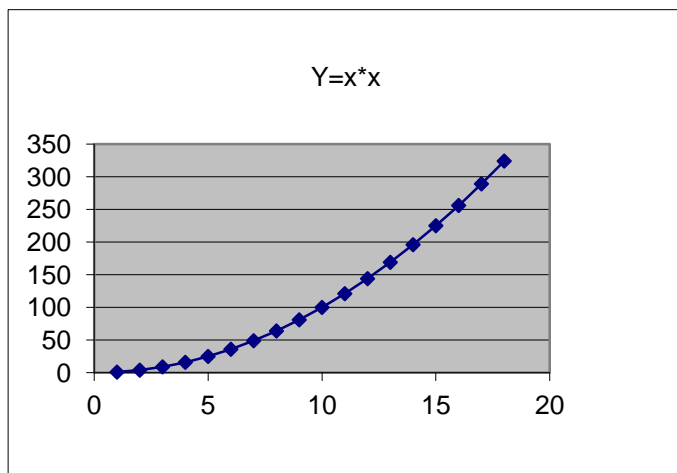
frequency	class	rel. freq.	Rank:
10	0-0,8	0.3125	0.0508
5	0,81-1,6	0.15625	0.1524
6	1,61-2,4	0.1875	0.2286
2	2,41-3,2	0.0625	0.3556
6	3,21-4,0	0.1875	0.3556
3	4,01-4,8514	0.09375	0.5588
			0.5588
			0.5842
			0.635
			0.6858
			0.8382
			1.016
			1.3208
			1.524
			1.5494
			1.7272
			1.8288
			1.8288
			1.905
			2.0066
			2.1082
			2.5654
			3.048
			3.2258
			3.2512
			3.4798
			3.4798
			3.4798
			3.5814
			4.318
			4.4704
			4.8514



rel. freq.



X	Y=x*x	X	Y=sin(x)
1	1	0	0
2	4	0.3	0.29552
3	9	0.6	0.564642
4	16	0.9	0.783327
5	25	1.2	
6	36		
7	49		
8	64		
9	81		
10	100		
11	121		
12	144		
13	169		
14	196		
15	225		
16	256		
17	289		
18	324		



## Gaussian function

show normal probability distribution  $N(2,9)$   
using Excel function `=norm.dist()`