

Task №9.

Attribute 1. Alcohol

very small:

avg: 12.434

std: 0.029

small:

avg: 12.98

std: 0.024

medium:

avg: 13.435

std: 0.026

large:

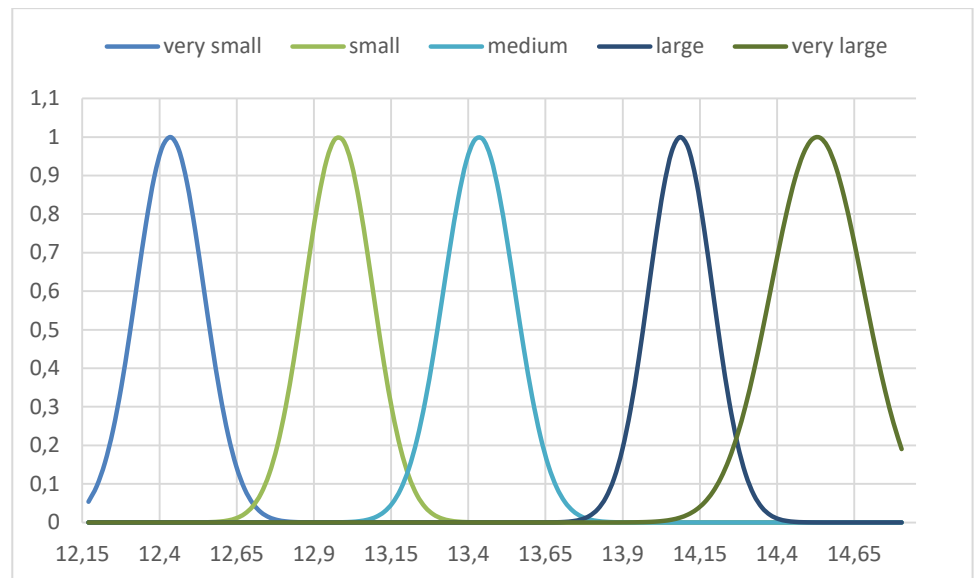
avg: 14.088

std: 0.021

very large:

avg: 14.53

std: 0.045



Attribute 2. Malic acid

very small:

avg: 1.317

std: 0.070

small:

avg: 2.241

std: 0.060

medium:

avg: 3.273

std: 0.089

large:

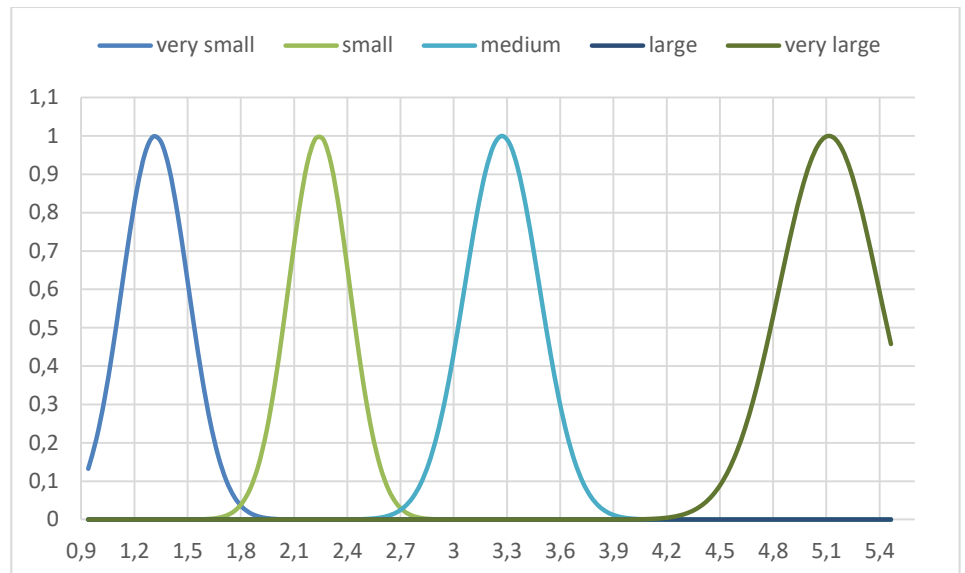
avg: 0

std: 0

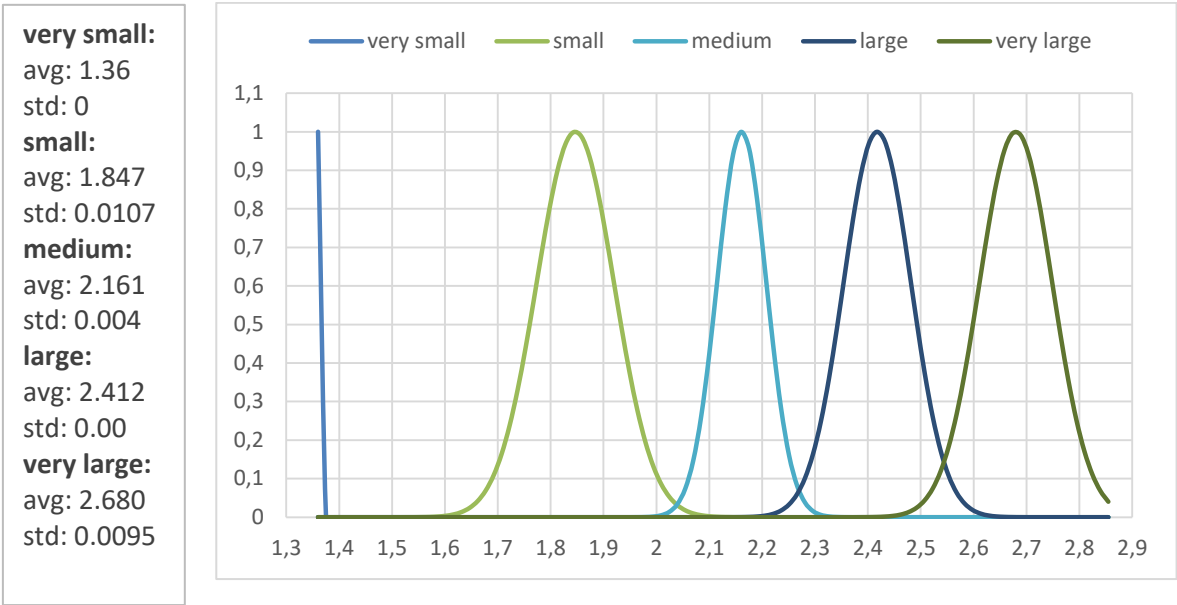
very large:

avg: 5.115

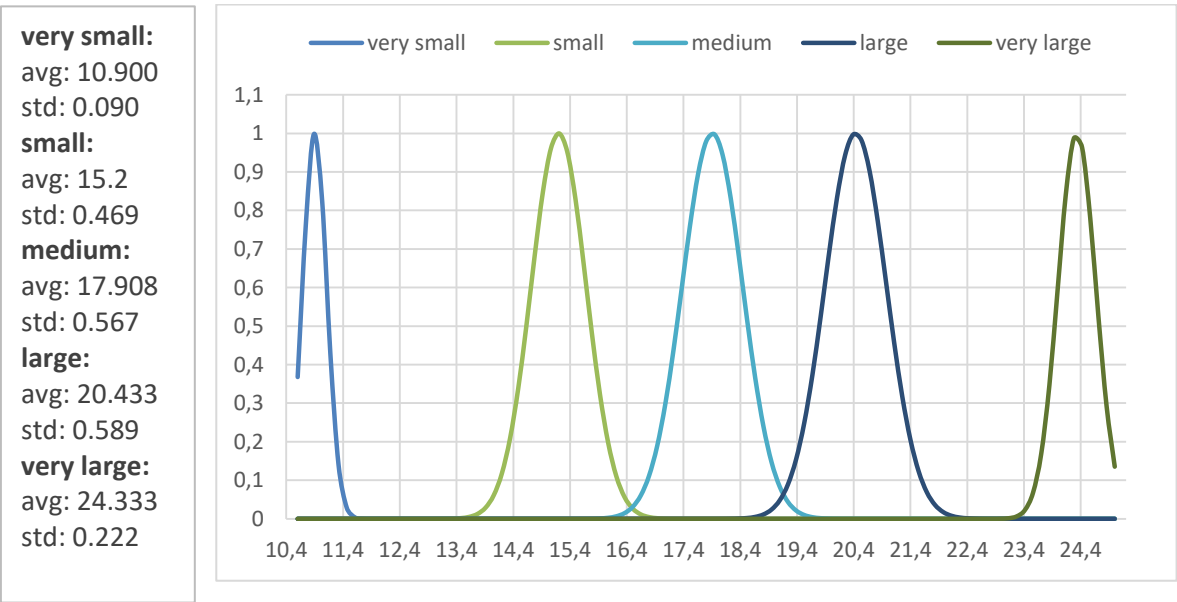
std: 0.156



Attribute 3. Ash



Attribute 4. Alkalinity of Ash



Attribute 5. Magnesium

very small:

avg: 82

std: 16.5

small:

avg: 92.75

std: 12.6875

medium:

avg: 101

std: 6.545

large:

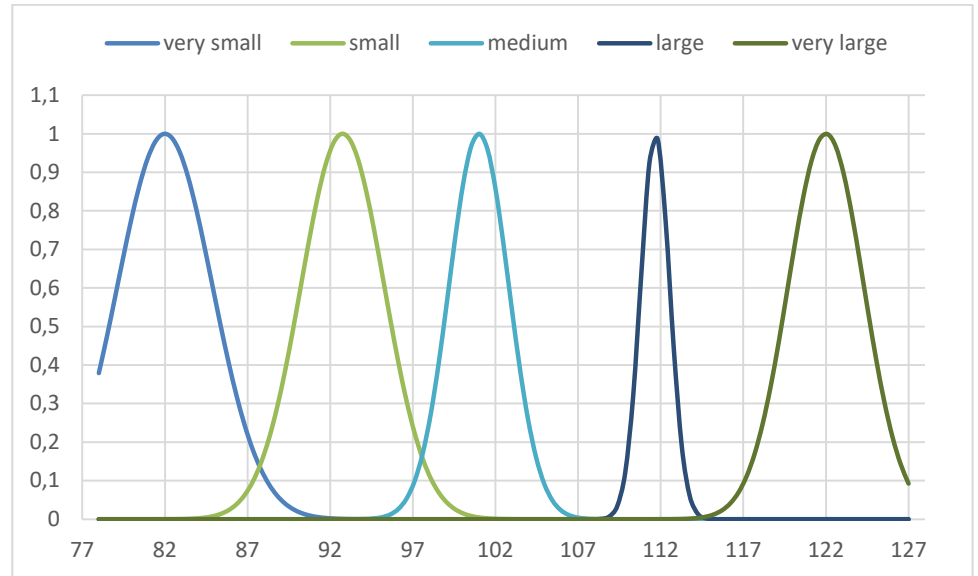
avg: 111.667

std: 1.556

very large:

avg: 122

std: 10.5



Attribute 6. Total phenols

very small:

avg: 1.43

std: 0.029

small:

avg: 1.96

std: 0.017

medium:

avg: 2.503

std: 0.012

large:

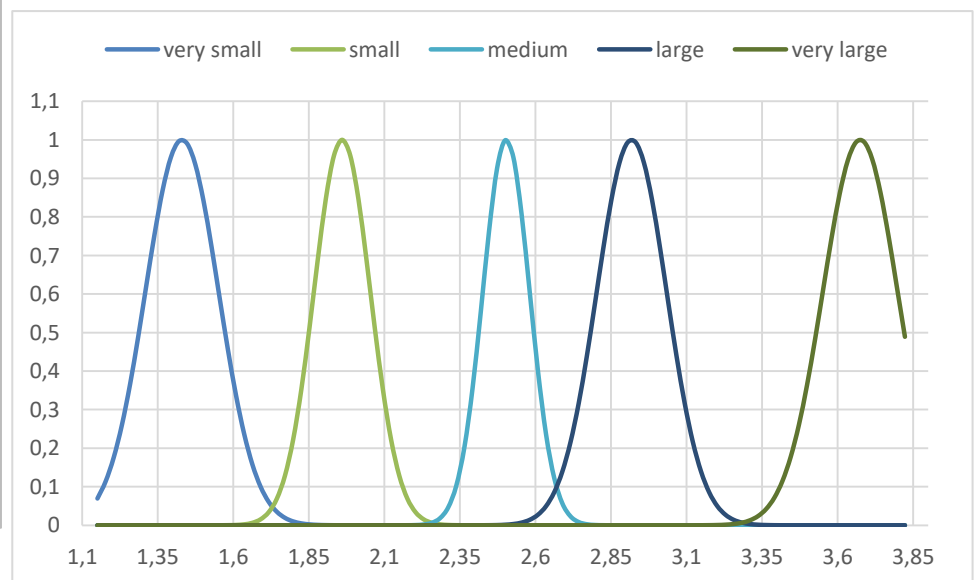
avg: 2.919

std: 0.027

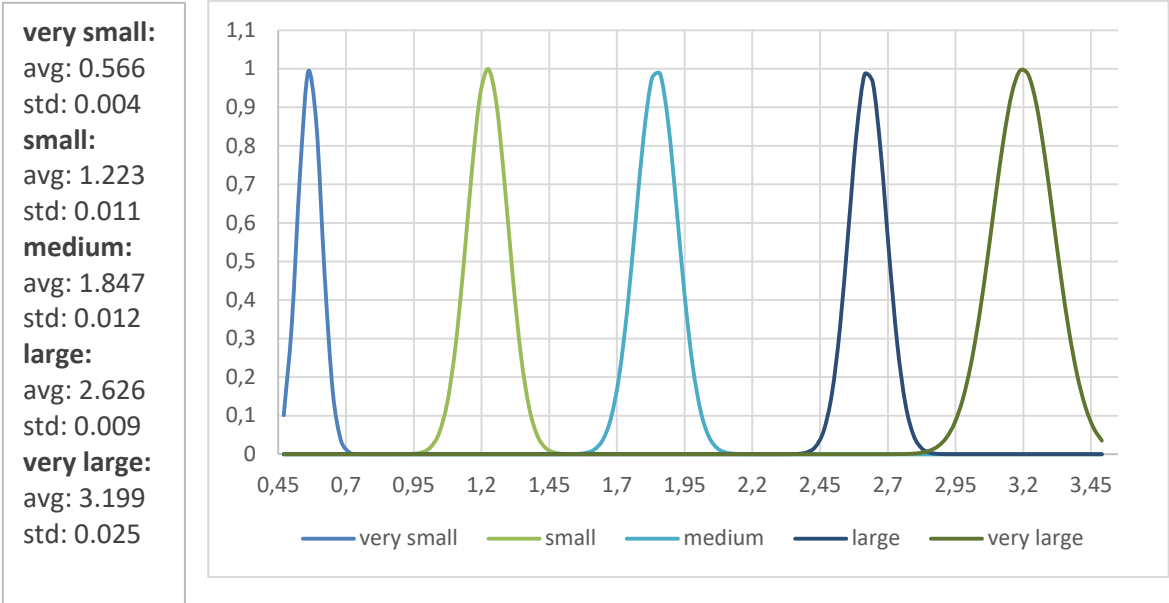
very large:

avg: 3.675

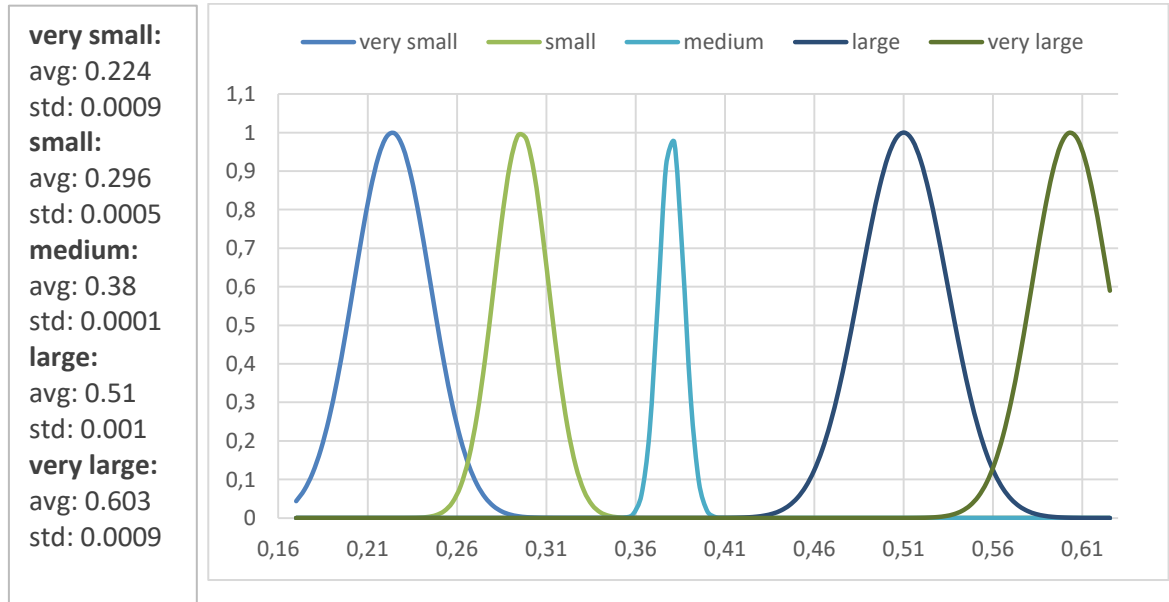
std: 0.031



Attribute 7. Flavonoids



Attribute 8. Nonflavonoid phenol



Attribute 9. Proanthocyanins

very small:

avg: 0.69

std: 0.0323

small:

avg: 1.104

std: 0.017

medium:

avg: 1.82

std: 0

large:

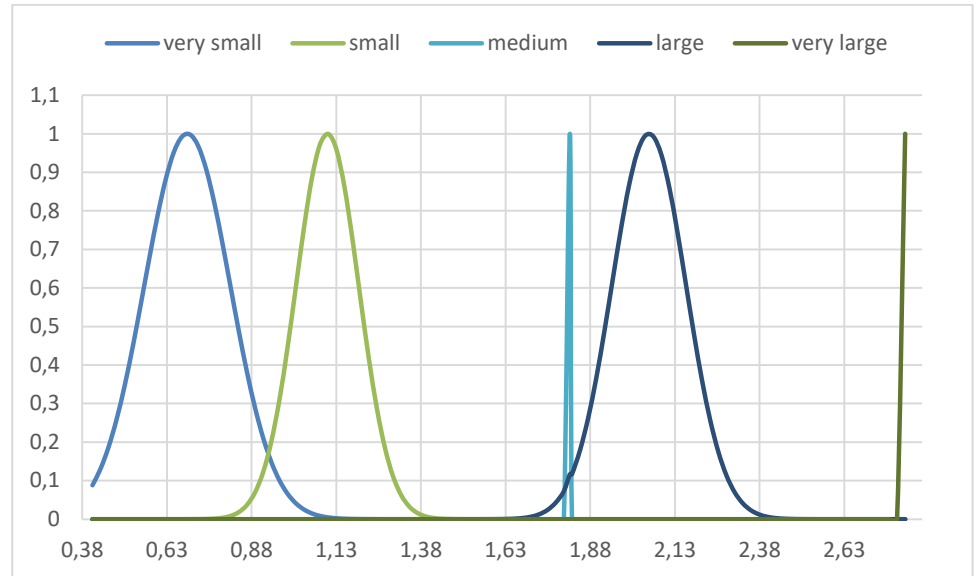
avg: 2.053

std: 0.024

very large:

avg: 2.81

std: 0



Attribute 10. Color intensity

very small:

avg: 2.45

std: 0.250

small:

avg: 3.638

std: 0.128

medium:

avg: 4.929

std: 0.136

large:

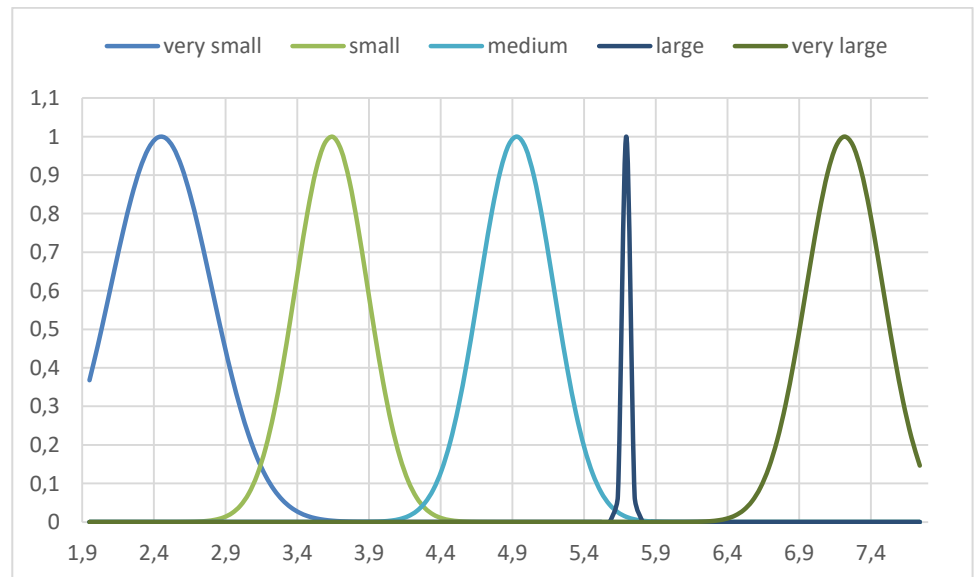
avg: 5.694

std: 0.001

very large:

avg: 7.218

std: 0.143



Attribute 11. Hue

very small:

avg: 0.748

std: 0.002

small:

avg: 0.857

std: 0.0008

medium:

avg: 1.048

std: 0.0015

large:

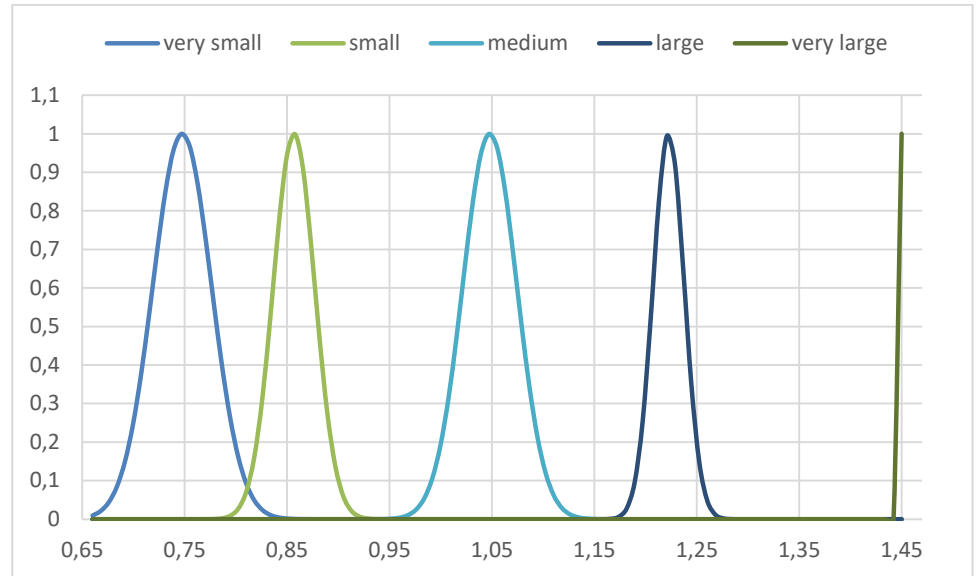
avg: 1.223

std: 0.0005

very large:

avg: 1.45

std: 0



Attribute 12. OD280/OD315 of diluted wines

very small:

avg: 1.467

std: 0.024

small:

avg: 2.042

std: 0.0374

medium:

avg: 2.72

std: 0.034

large:

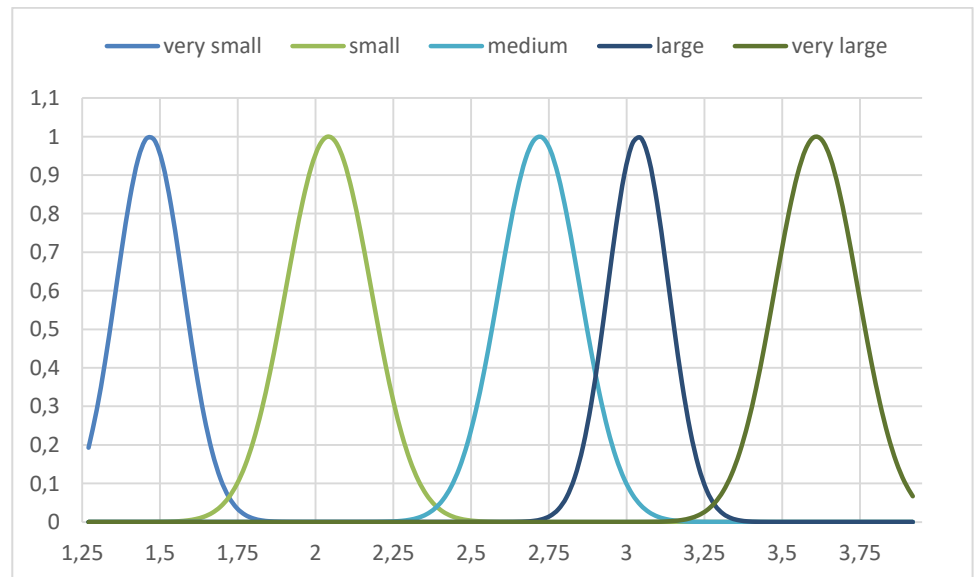
avg: 3.038

std: 0.019

very large:

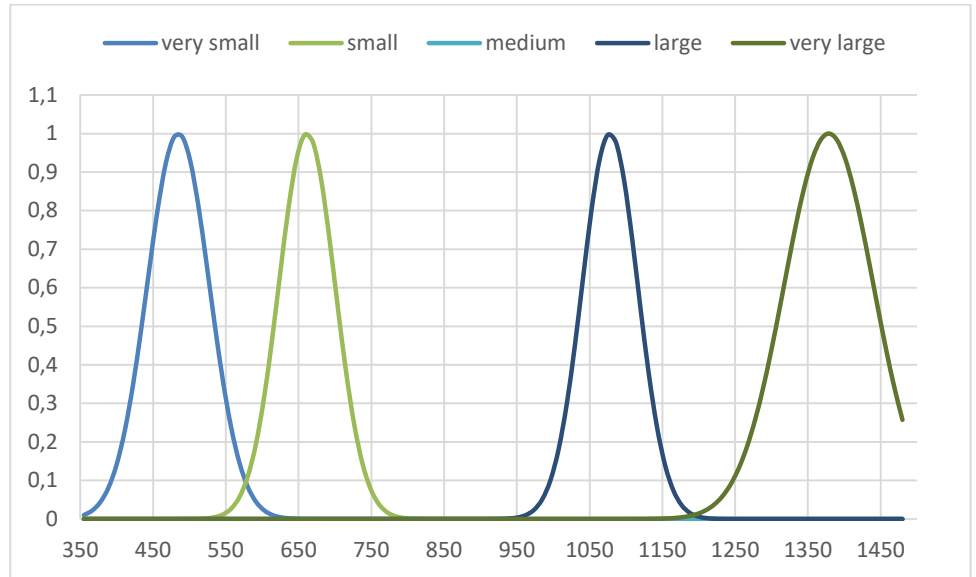
avg: 3.610

std: 0.036



Attribute 13. Proline

very small:
avg: 484.666
std: 3670.888
small:
avg: 661.5
std: 3003.916
medium:
avg: 0
std: 0
large:
avg: 1078
std: 2916
very large:
avg: 1378.75
std: 7554.687



Initial data

class	x1	x2	x3	x4	x5	x6	x7	x8	x9	x10	x11	x12	x13
1	14,23	1,71	2,43	15,6	127	2,8	3,06	0,28	2,29	5,64	1,04	3,92	1065
	13,2	1,78	2,14	11,2	100	2,65	2,76	0,26	1,28	4,38	1,05	3,4	1050
	13,16	2,36	2,67	18,6	101	2,8	3,24	0,3	2,81	5,68	1,03	3,17	1185
	14,37	1,95	2,5	16,8	113	3,85	3,49	0,24	2,18	7,8	0,86	3,45	1480
	13,24	2,59	2,87	21	118	2,8	2,69	0,39	1,82	4,32	1,04	2,93	735
	14,2	1,76	2,45	15,2	112	3,27	3,39	0,34	1,97	6,75	1,05	2,85	1450
	14,39	1,87	2,45	14,6	96	2,5	2,52	0,3	1,98	5,25	1,02	3,58	1290
	14,06	2,15	2,61	17,6	121	2,6	2,51	0,31	1,25	5,05	1,06	3,58	1295
	14,83	1,64	2,17	14	97	2,8	2,98	0,29	1,98	5,2	1,08	2,85	1045
2	13,86	1,35	2,27	16	98	2,98	3,15	0,22	1,85	7,22	1,01	3,55	1045
	12,37	0,94	1,36	10,6	88	1,98	0,57	0,28	0,42	1,95	1,05	1,82	520
	12,33	1,1	2,28	16	101	2,05	1,09	0,63	0,41	3,27	1,25	1,67	680
	12,64	1,36	2,02	16,8	100	2,02	1,41	0,53	0,62	5,75	0,98	1,59	450
	13,67	1,25	1,92	18	94	2,1	1,79	0,32	0,73	3,8	1,23	2,46	630
	12,37	1,13	2,16	19	87	3,5	3,1	0,19	1,87	4,45	1,22	2,87	420
	12,17	1,45	2,53	19	104	1,89	1,75	0,45	1,03	2,95	1,45	2,23	355
	12,37	1,21	2,56	18,1	98	2,42	2,65	0,37	2,08	4,6	1,19	2,3	678
	13,11	1,01	1,7	15	78	2,98	3,18	0,26	2,28	5,3	1,12	3,18	502
3	12,37	1,17	1,92	19,6	78	2,11	2	0,27	1,04	4,68	1,12	3,48	510
	13,34	0,94	2,36	17	110	2,53	1,3	0,55	0,42	3,17	1,02	1,93	750
	12,86	1,35	2,32	18	122	1,51	1,25	0,21	0,94	4,1	0,76	1,29	630
	12,88	2,99	2,4	20	104	1,3	1,22	0,24	0,83	5,4	0,74	1,42	530
	12,81	2,31	2,4	24	98	1,15	1,09	0,27	0,83	5,7	0,66	1,36	560
	12,7	3,55	2,36	21,5	106	1,7	1,2	0,17	0,84	5	0,78	1,29	600
	12,51	1,24	2,25	17,5	85	2	0,58	0,6	1,25	5,45	0,75	1,51	650
	12,6	2,46	2,2	18,5	94	1,62	0,66	0,63	0,94	7,1	0,73	1,58	695
	12,25	4,72	2,54	21	89	1,38	0,47	0,53	0,8	3,85	0,75	1,27	720
	12,53	5,51	2,64	25	96	1,79	0,6	0,63	1,1	5	0,82	1,69	515
	13,49	3,59	2,19	19,5	88	1,62	0,48	0,58	0,88	5,7	0,81	1,82	580
	12,84	2,96	2,61	24	101	2,32	0,6	0,53	0,81	4,92	0,89	2,15	590

My rules

IF	X_1=very large	X_2=small	X_3=large	X_4=medium	X_5=small	X_6=medium	X_7=large		
IF	X_1=very large	X_2=small	X_3=large	X_4=medium	X_5=medium	X_6=medium	X_7=large		
IF	X_1=very small	X_2=very small	X_3=very large	X_4=very large	X_5=very small	X_6=small	X_7=small		
IF	X_1=medium	X_2=very small	X_3=small	X_4=medium	X_5=very small	X_6=medium	X_7=medium		
IF	X_1=small	X_2=very large	X_3=large	X_4=medium	X_5=large	X_6=very small	X_7=very small		
IF	X_1=medium	X_2=small	X_3=very large	X_4=very large	X_5=large	X_6=small	X_7=very small		
IF	X_1=large	X_2=large	X_3=medium	X_4=small	X_5=very large	X_6=large	X_7=very large		
	X_8=very small	X_9=large	X_10=very large	X_11=large	X_12=medium	X_13=medium	THEN		A
	X_8=small	X_9=large	X_10=very large	X_11=large	X_12=large	X_13=very large	THEN		A
	X_8=small	X_9=large	X_10=small	X_11=medium	X_12=small	X_13=very small	THEN		B
	X_8=small	X_9=large	X_10=small	X_11=large	X_12=medium	X_13=very small	THEN		B
	X_8=large	X_9=very small	X_10=medium	X_11=small	X_12=small	X_13=small	THEN		C
	X_8=small	X_9=small	X_10=very large	X_11=very small	X_12=medium	X_13=small	THEN		C
	X_8=medium	X_9=medium	X_10=very small	X_11=very large	X_12=very large	X_13=medium	THEN		other

	Family A	Family B	Family C	Evaluation
	Rule -1	Rule - 2	Rule - 3	
	A or B or C or other	A or B or C or other	A or B or C or other	
1	A	B	C	Good
2	A	B	C	Good
3	A	B	C	Good
4	A	B	C	Good
5	A	A	C	Not Good
Success rate	100%	80%	100%	80%