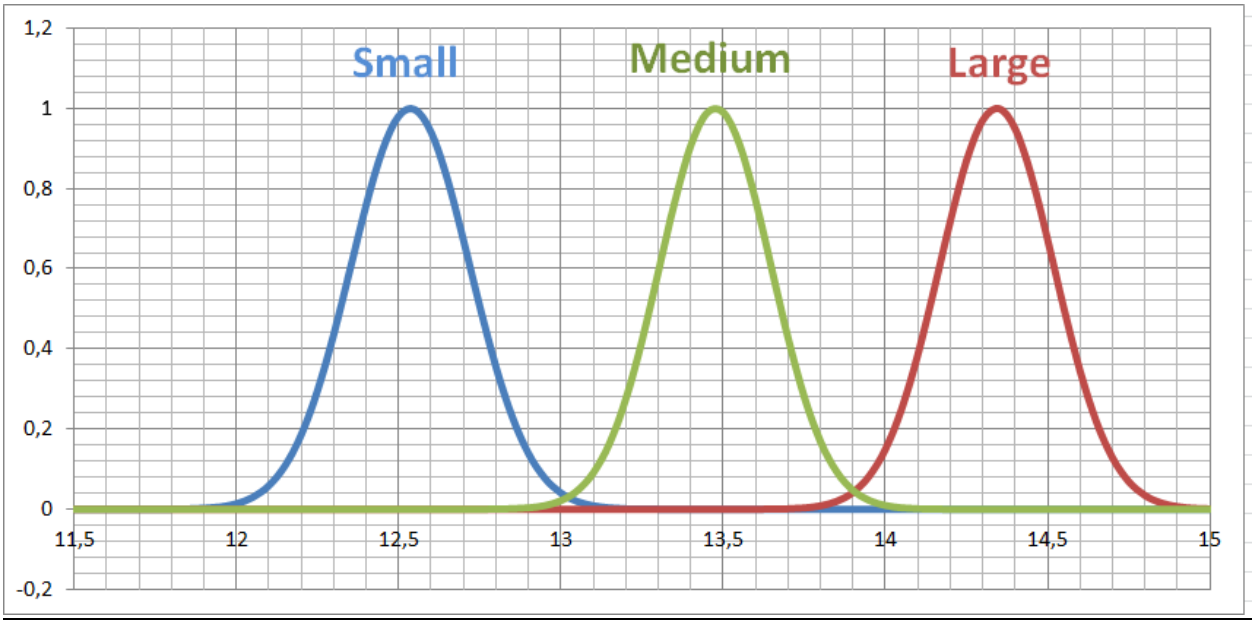
Contemporary Data Processing Technology (CCOD)
Lab 8 (October 17, 2016)
Savchuk Artem, AS-36

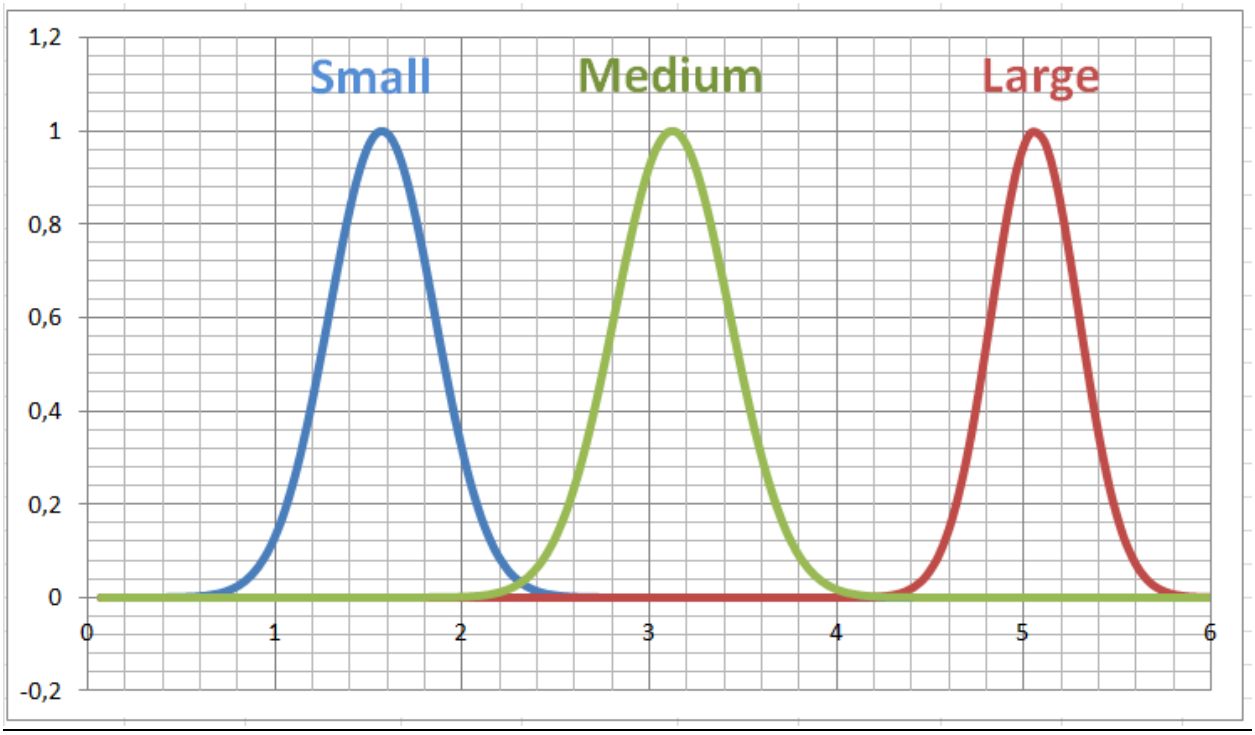
Initial data:

class	x1	x2	x3	x4	x5	x6	x7	x8	x9	x10	x11	x12	x13
class 1	14,23	1,71	2,43	15,60	127,00	2,80	3,06	0,28	2,29	5,64	1,04	3,92	1065,00
	13,20	1,78	2,14	11,20	100,00	2,65	2,76	0,26	1,28	4,38	1,05	3,40	1050,00
	13,16	2,36	2,67	18,60	101,00	2,80	3,24	0,30	2,81	5,68	1,03	3,17	1185,00
	14,37	1,95	2,50	16,80	113,00	3,85	3,49	0,24	2,18	7,80	0,86	3,45	1480,00
	13,24	2,59	2,87	21,00	118,00	2,80	2,69	0,39	1,82	4,32	1,04	2,93	735,00
	14,20	1,76	2,45	15,20	112,00	3,27	3,39	0,34	1,97	6,75	1,05	2,85	1450,00
	14,39	1,87	2,45	14,60	96,00	2,50	2,52	0,30	1,98	5,25	1,02	3,58	1290,00
	14,06	2,15	2,61	17,60	121,00	2,60	2,51	0,31	1,25	5,05	1,06	3,58	1295,00
	14,83	1,64	2,17	14,00	97,00	2,80	2,98	0,29	1,98	5,20	1,08	2,85	1045,00
	13,86	1,35	2,27	16,00	98,00	2,98	3,15	0,22	1,85	7,22	1,01	3,55	1045,00
	14,10	2,16	2,30	18,00	105,00	2,95	3,32	0,22	2,38	5,75	1,25	3,17	1510,00
	14,12	1,48	2,32	16,80	95,00	2,20	2,43	0,26	1,57	5,00	1,17	2,82	1280,00
	13,75	1,73	2,41	16,00	89,00	2,60	2,76	0,29	1,81	5,60	1,15	2,90	1320,00
	14,75	1,73	2,39	11,40	91,00	3,10	3,69	0,43	2,81	5,40	1,25	2,73	1150,00
	14,38	1,87	2,38	12,00	102,00	3,30	3,64	0,29	2,96	7,50	1,20	3,00	1547,00
class 2	12,37	0,94	1,36	10,60	88,00	1,98	0,57	0,28	0,42	1,95	1,05	1,82	520,00
	12,33	1,10	2,28	16,00	101,00	2,05	1,09	0,63	0,41	3,27	1,25	1,67	680,00
	12,64	1,36	2,02	16,80	100,00	2,02	1,41	0,53	0,62	5,75	0,98	1,59	450,00
	13,67	1,25	1,92	18,00	94,00	2,10	1,79	0,32	0,73	3,80	1,23	2,46	630,00
	12,37	1,13	2,16	19,00	87,00	3,50	3,10	0,19	1,87	4,45	1,22	2,87	420,00
	12,17	1,45	2,53	19,00	104,00	1,89	1,75	0,45	1,03	2,95	1,45	2,23	355,00
	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
	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
	12,21	1,19	1,75	16,8	151	1,85	1,28	0,14	2,5	2,85	1,28	3,07	718
	12,29	1,61	2,21	20,4	103	1,1	1,02	0,37	1,46	3,05	0,906	1,82	870
	13,86	1,51	2,67	25	86	2,95	2,86	0,21	1,87	3,38	1,36	3,16	410
	13,49	1,66	2,24	24	87	1,88	1,84	0,27	1,03	3,74	0,98	2,78	472
	12,99	1,67	2,6	30	139	3,3	2,89	0,21	1,96	3,35	1,31	3,5	985
class 3	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
	12,93	2,81	2,7	21	96	1,54	0,5	0,53	0,75	4,6	0,77	2,31	600
	13,36	2,56	2,35	20	89	1,4	0,5	0,37	0,64	5,6	0,7	2,47	780
	13,52	3,17	2,72	23,5	97	1,55	0,52	0,5	0,55	4,35	0,89	2,06	520
	13,62	4,95	2,35	20	92	2	0,8	0,47	1,02	4,4	0,91	2,05	550
	12,25	3,88	2,2	18,5	112	1,38	0,78	0,29	1,14	8,21	0,65	2	855

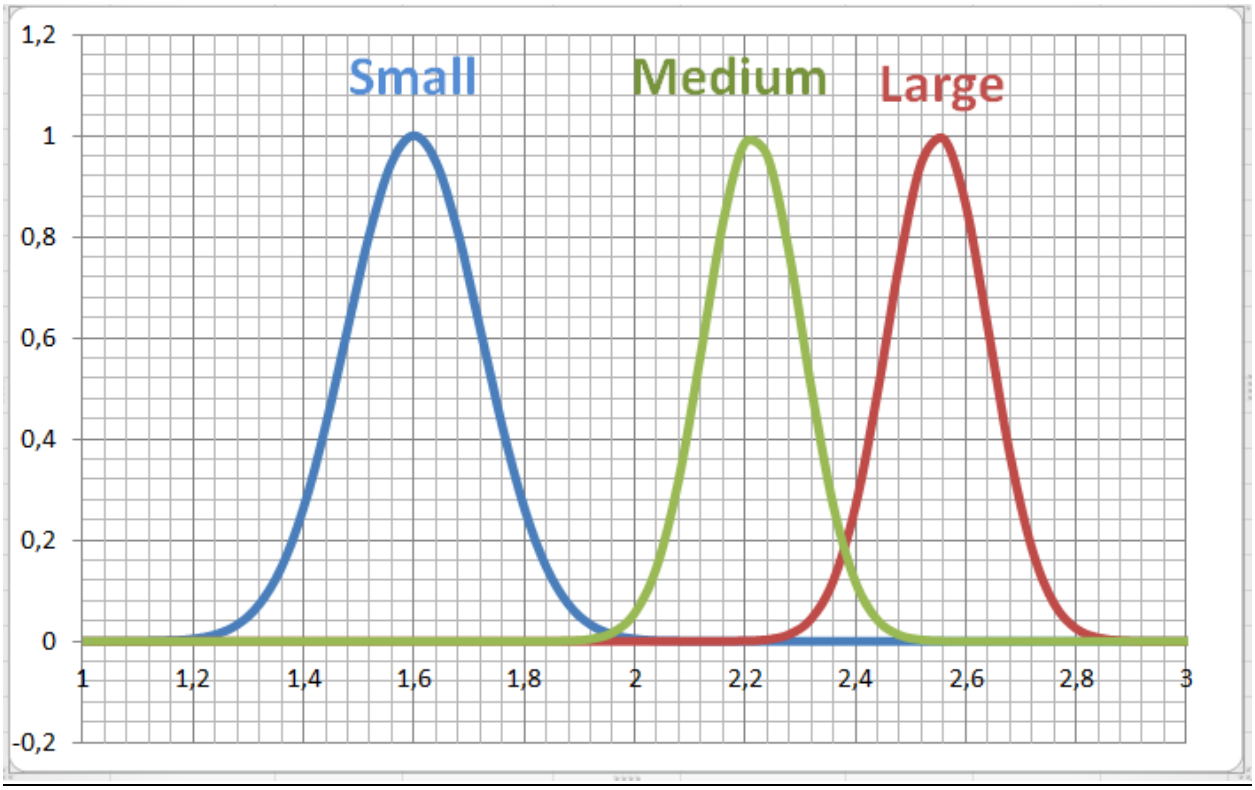
Membership functions for attribute x1:



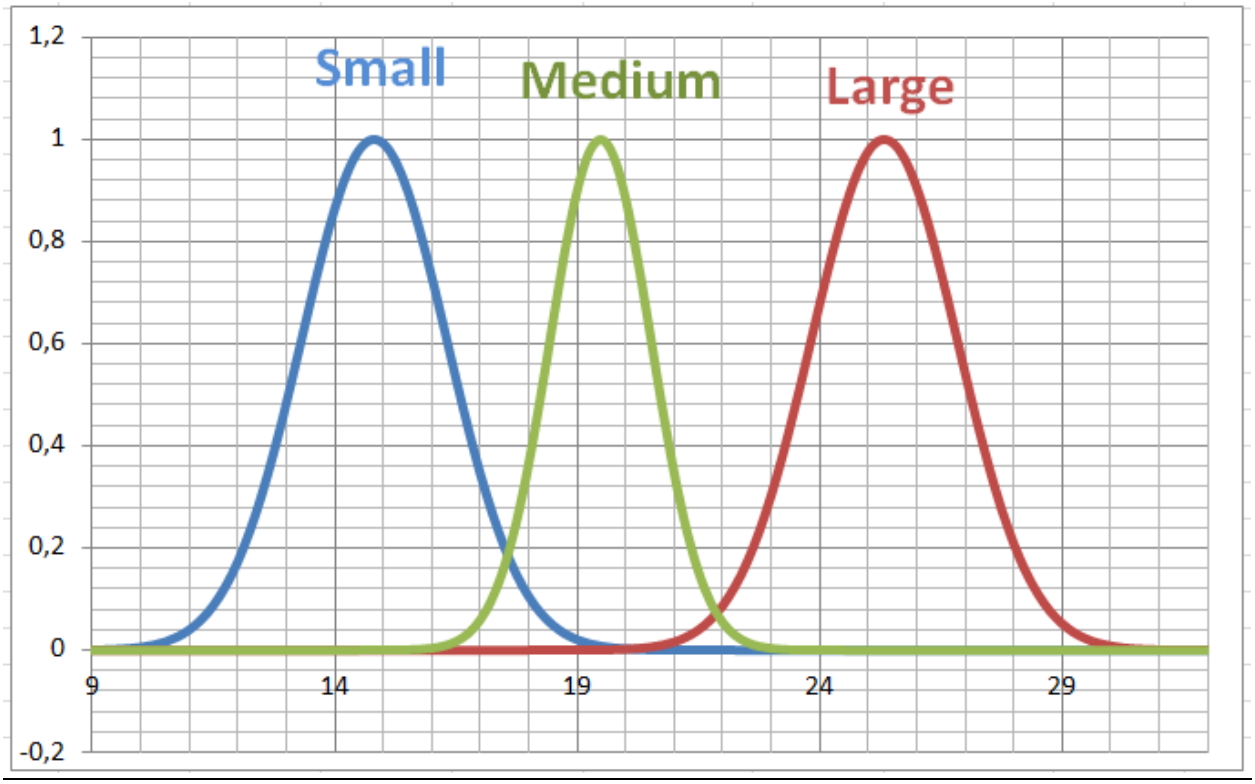
Membership functions for attribute x2:



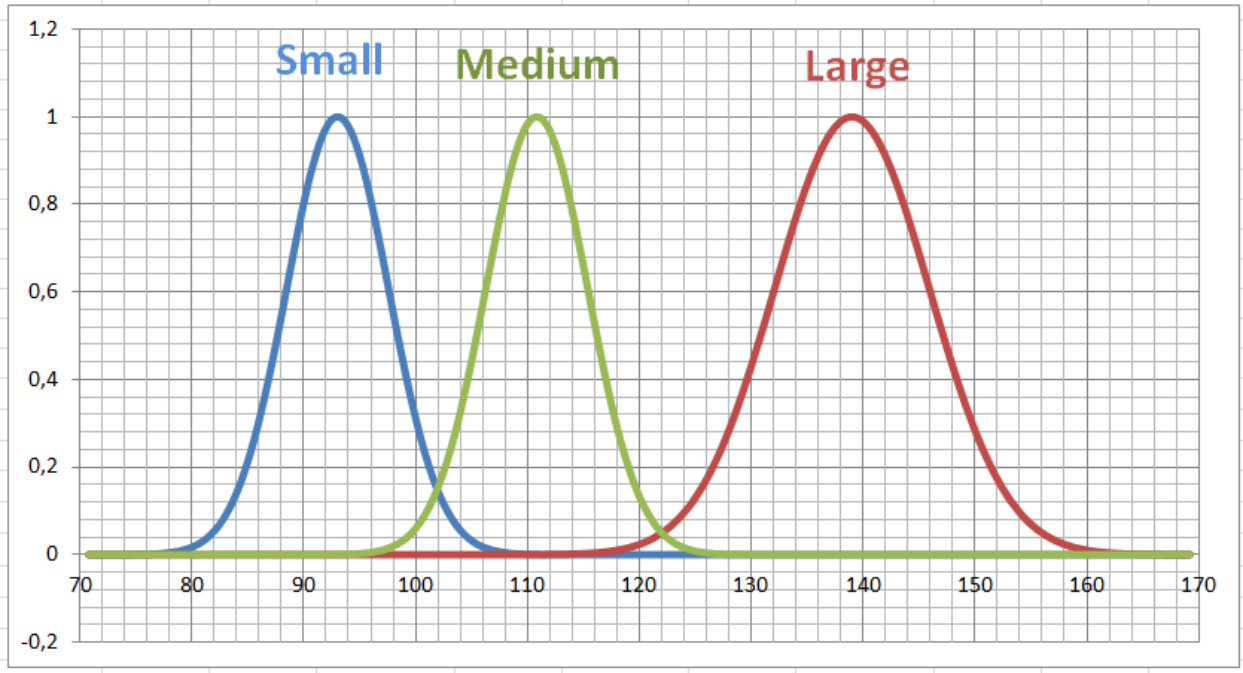
Membership functions for attribute x3:



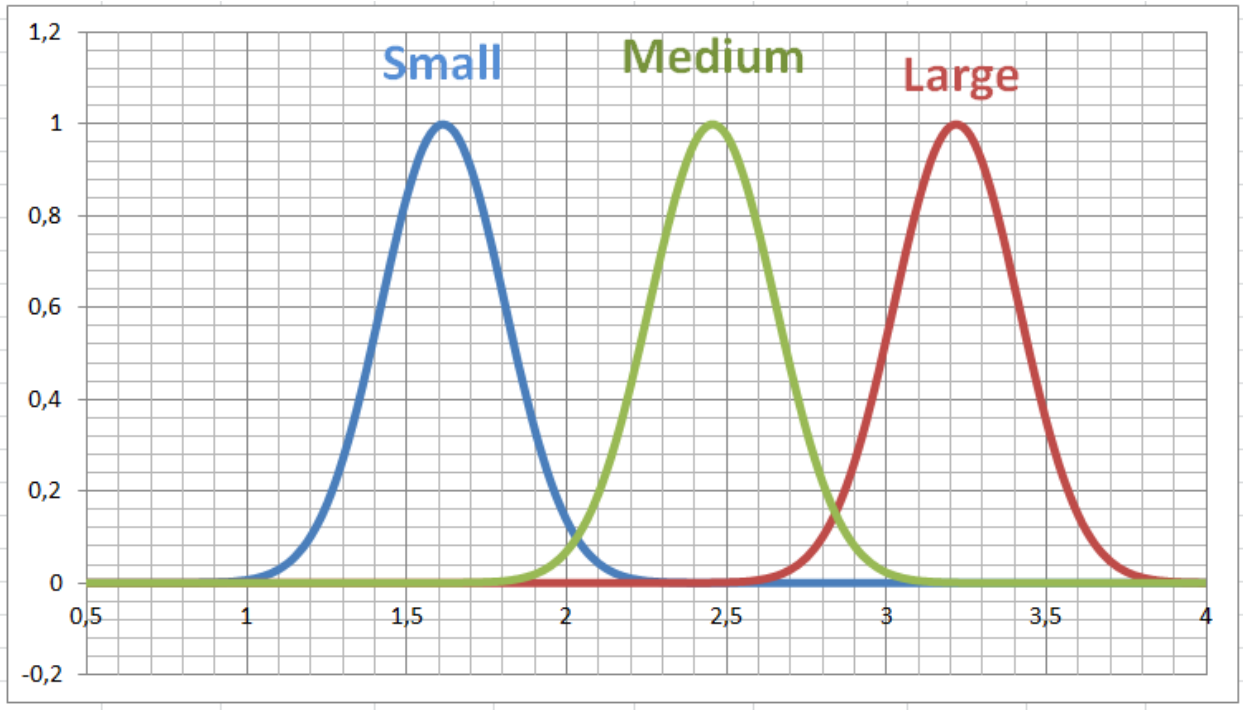
Membership functions for attribute x4:



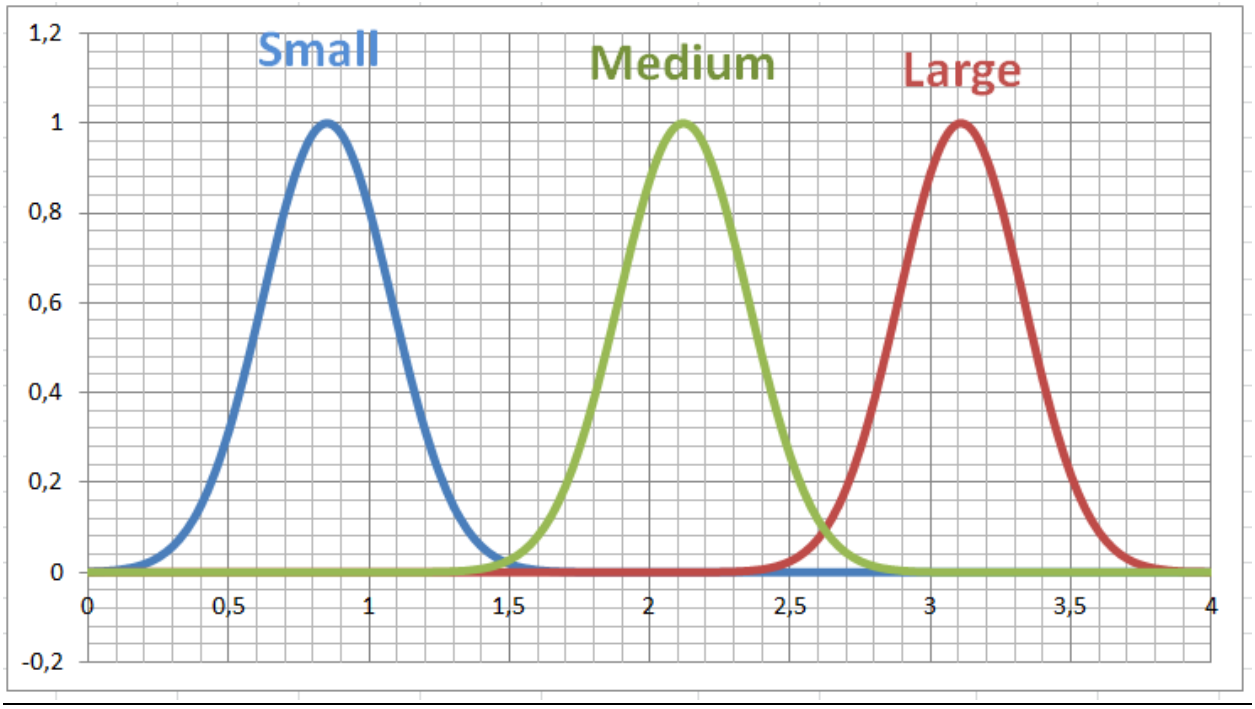
Membership functions for attribute x5:



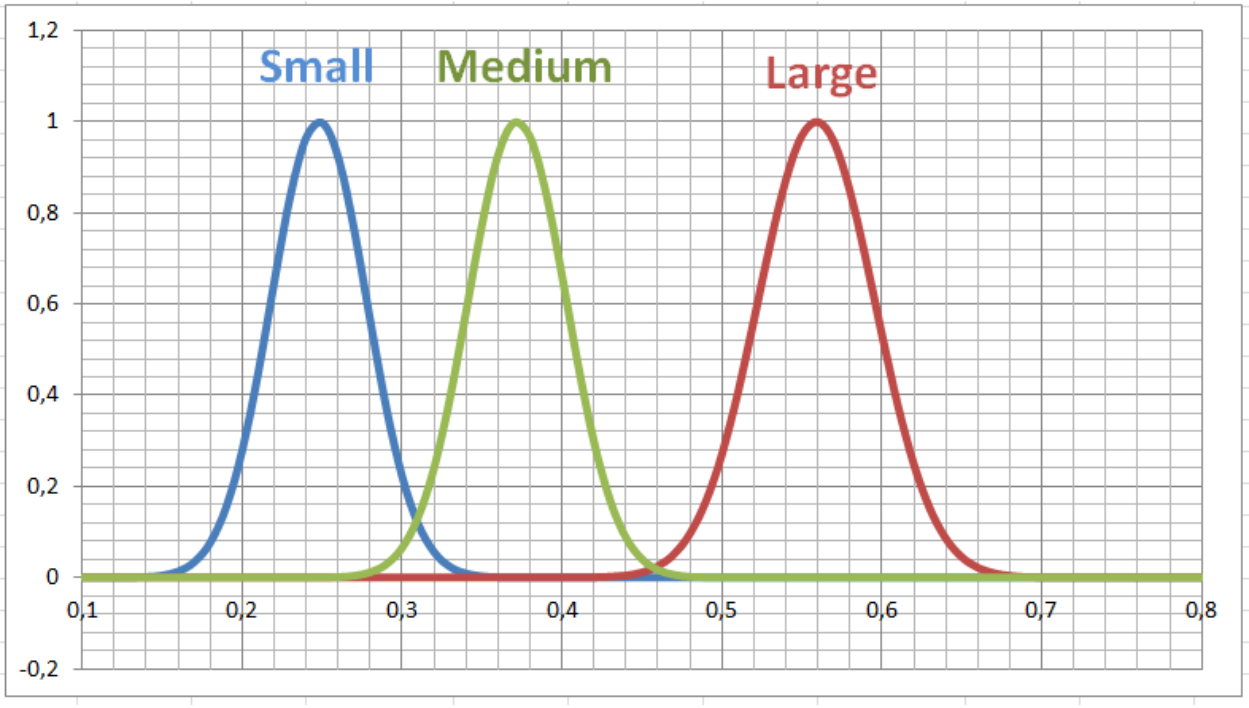
Membership functions for attribute x6:



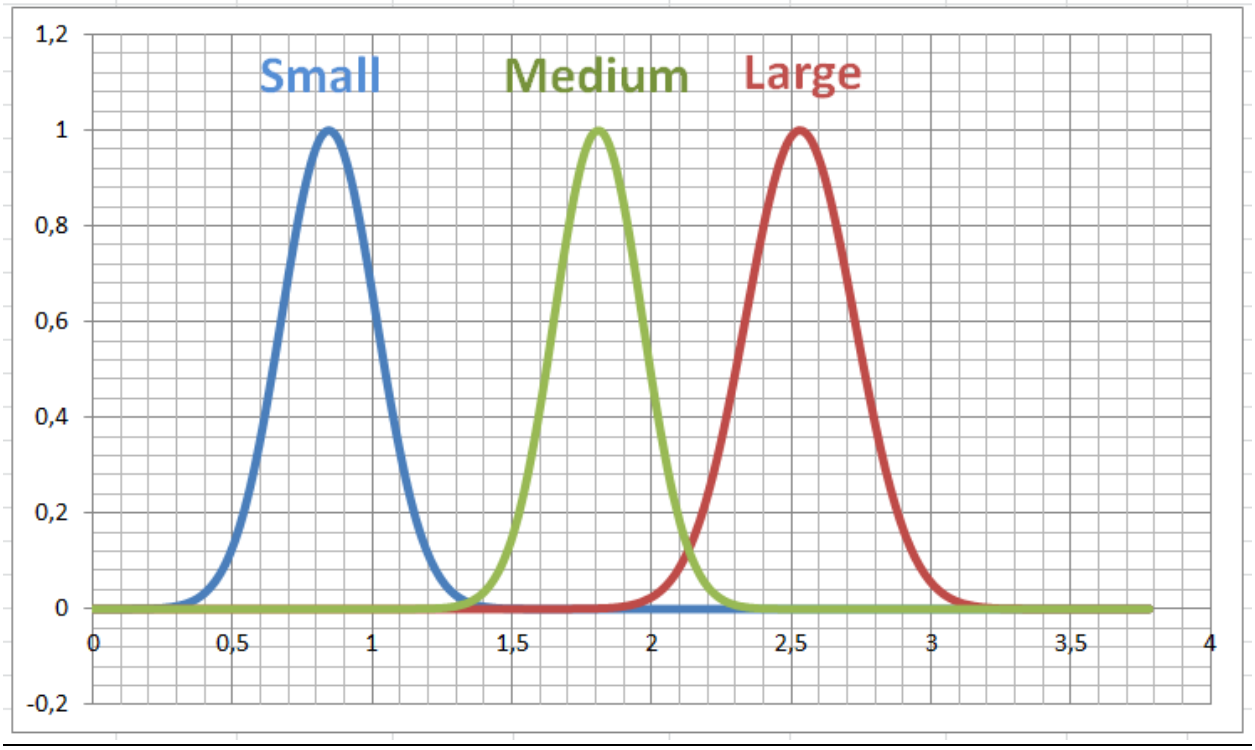
Membership functions for attribute x7:



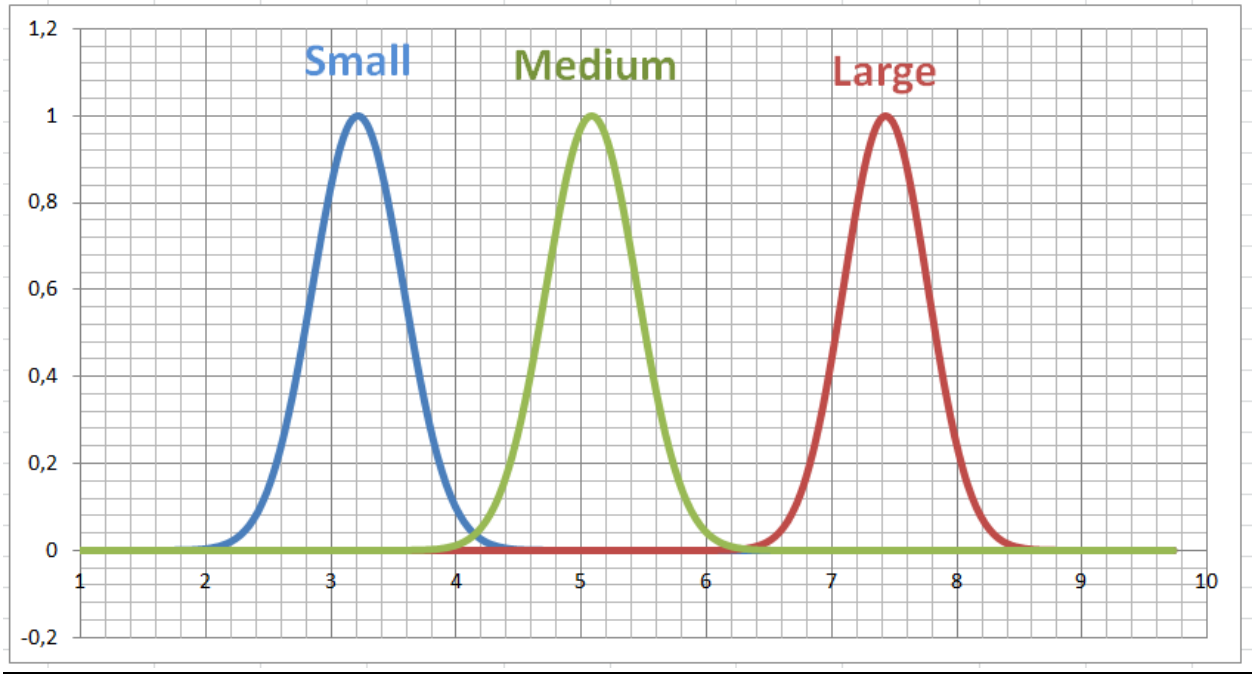
Membership functions for attribute x8:



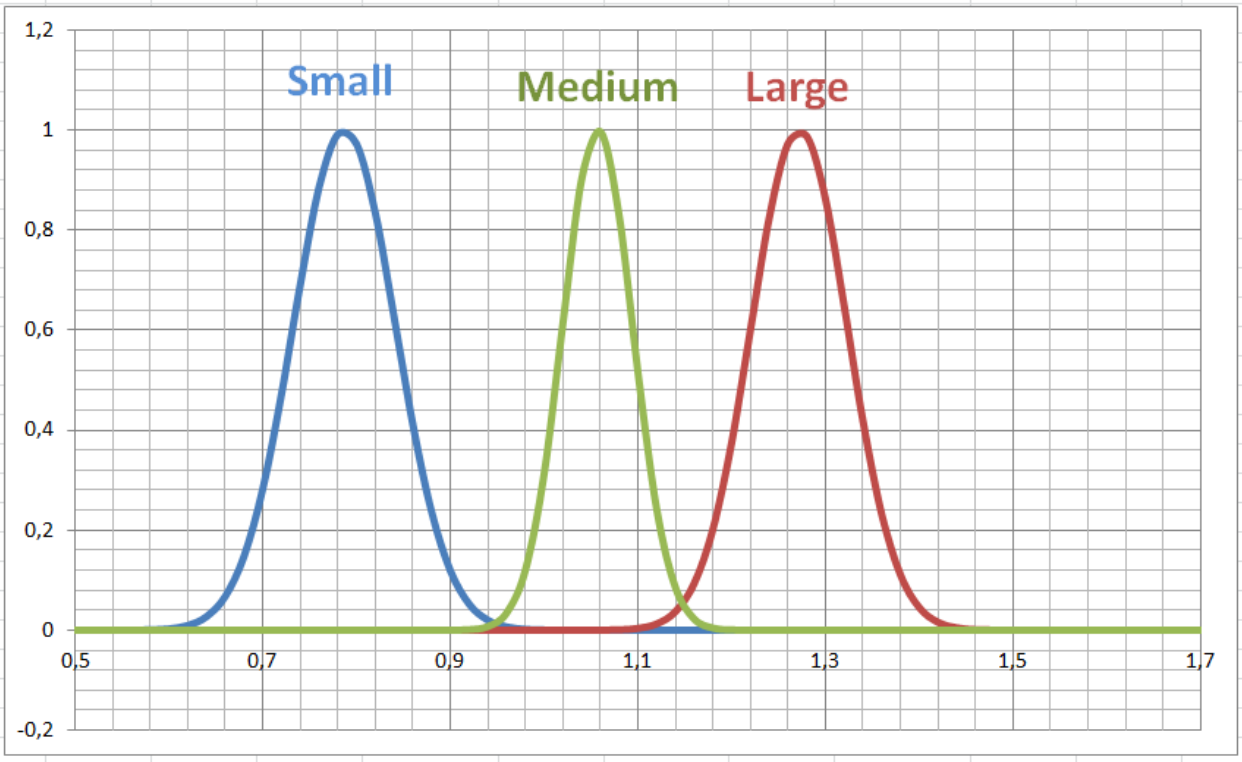
Membership functions for attribute x9:



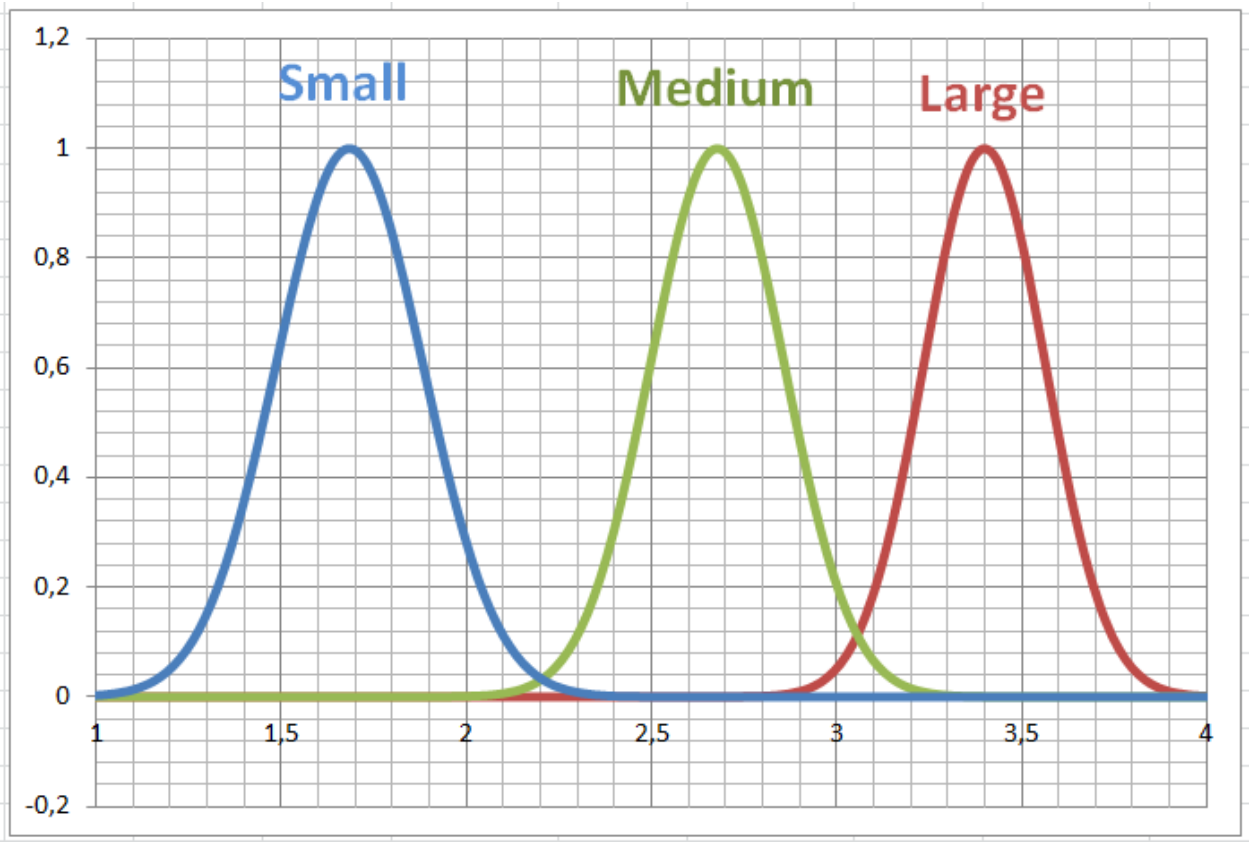
Membership functions for attribute x10:



Membership functions for attribute x11:



Membership functions for attribute x12:



Membership functions for attribute x13:

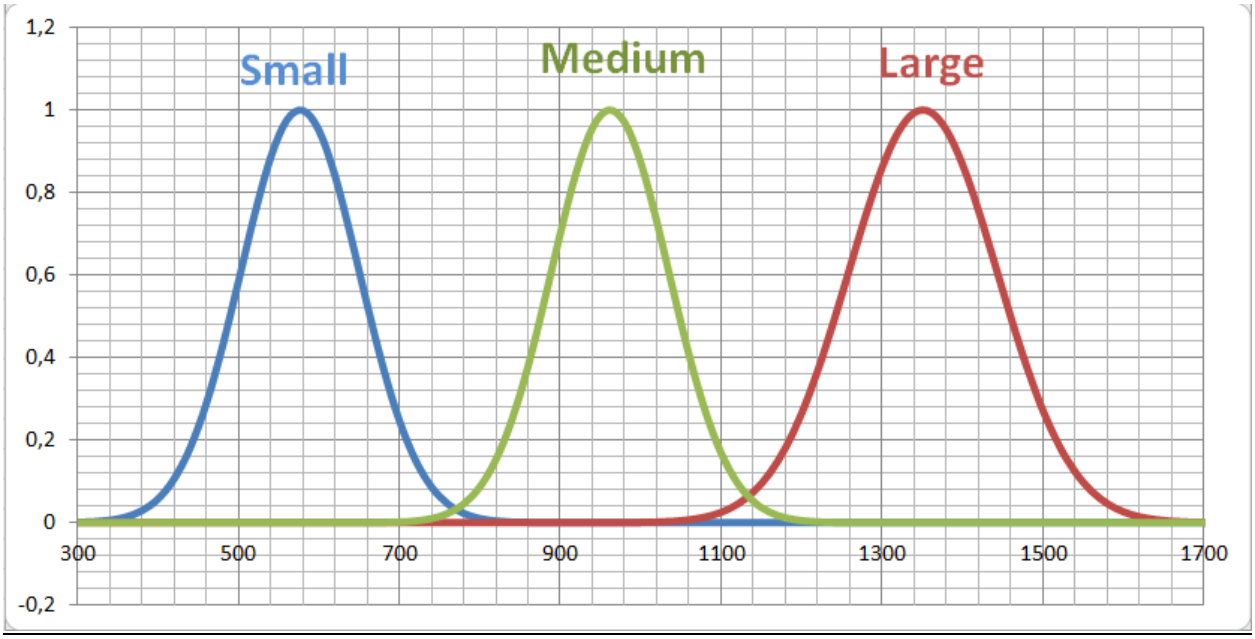


Table of rules:

If X1	AND X2	AND X3	AND X4	AND X5	AND X6	AND X7	AND X8	AND X9	AND X10	AND X11	AND X12	AND X3	Then
large	small	medium	small	medium	large	large	small	large	medium	large	large	large	1
small	small	medium	medium	small	medium	medium	small	medium	small	large	medium	small	2
small	medium	large	medium	small	small	small	large	small	medium	small	small	small	3
medium	large	small	large	large	medium	medium	medium	medium	medium	medium	medium	medium	other

No.	Family A	Family B	Family C	Evaluate
#1	A	B	C	Good
#2	A	B	C	Good
#3	A	B	C	Good
#4	A	C	C	Not Good
#5	A	B	C	Good
#6	A	B	C	Good
#7	B	B	C	Not Good
#8	A	B	C	Good
#9	B	B	C	Not Good
#10	B	C	C	Not Good
#11	B	B	C	Not Good
#12	A	B	C	Good
#13	B	B	C	Not Good
#14	A	B	C	Good
#15	A	B	C	Good
#16	A	B	C	Good
#17	A	B	C	Good
#18	A	C	C	Not Good
#19	A	C	C	Not Good
#20	A	B	C	Good
#21	A	B	C	Good
#22	B	B	C	Not Good
#23	B	B	C	Not Good
#24	B	B	C	Not Good
#25	A	B	C	Good
#26	A	B	C	Good
#27	other	B	C	Not Good
#28	A	B	C	Good
#29	other	B	C	Not Good
#30	A	B	C	Good
#31	other	B	C	Not Good
#32	A	C	C	Not Good
#33	A	B	C	Good
#34	A	C		Not Good
#35	A	B		Good
#36	A	B		Good
#37	A	B		Good
#38	A	B		Good
#39	A	C		Not Good
#40	A	B		Good
#41	A	B		Good
#42	A	B		Good
#43	A	B		Good
#44	A	B		Good
#45		C		Not Good
#46		B		Good
#47		B		Good
#48		B		Good
#49		C		Not Good
#50		other		Not Good
#51		B		Good
#52		B		Good
#53		B		Good
#54		C		Not Good
#55		B		Good
#56		C		Not Good
Success rate	75%	78,50%	100%	59%