Membership Function for Very Small: $e^{\frac{-(x-0.143667)^2}{0.00385}}$

Membership Function for Small: $e^{\frac{-(x-0.318571)^2}{0.005069}}$

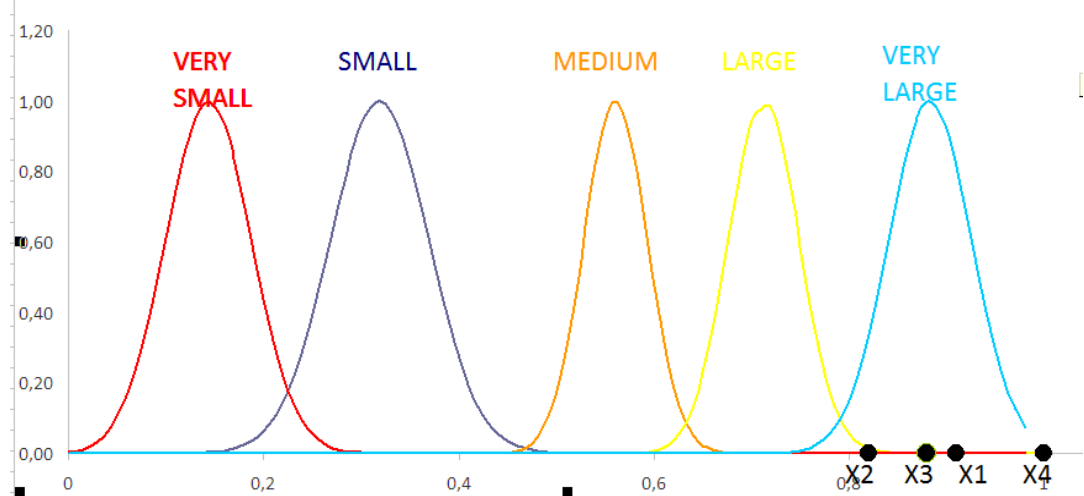**Membership Function for Medium:** $e^{\frac{-(x-0.560488)^2}{0.002102}}$

Membership Function for Large: $e^{\frac{-(x-0.712558)^2}{0.002626}}$

Membership Function for Very Large: $e^{\frac{-(x-0.88275)^2}{0.003615}}$
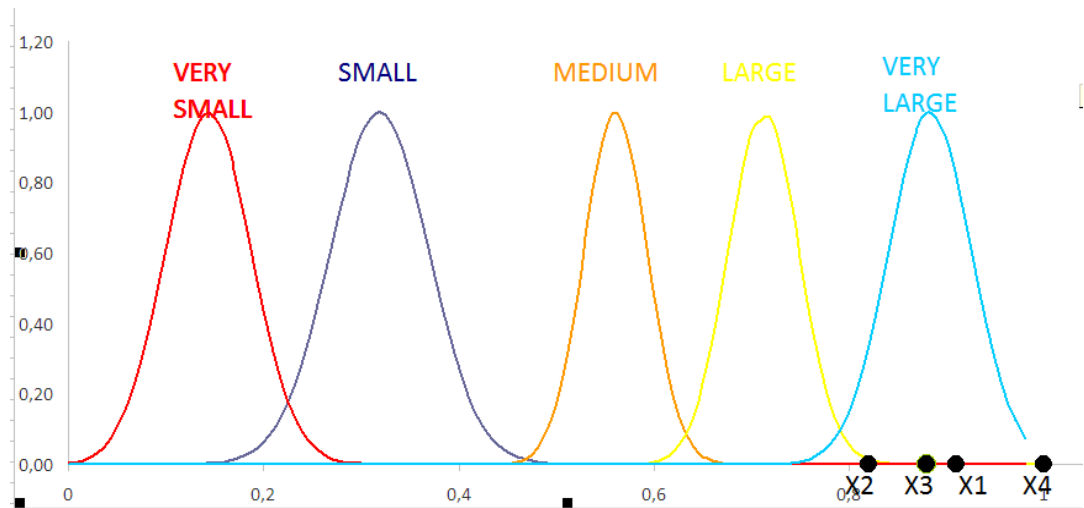
Set of rules:

IF x1 is	AND x2 is	AND x3 is	AND x4 is	THEN
medium	large	small	very small	Setosa
large	large	medium	medium	Versicolor
very large	large	very large	very large	Virginica

For 1 rule (IF x1 is medium AND x2 is large AND x3 is small AND x4 is very small THEN Setosa):
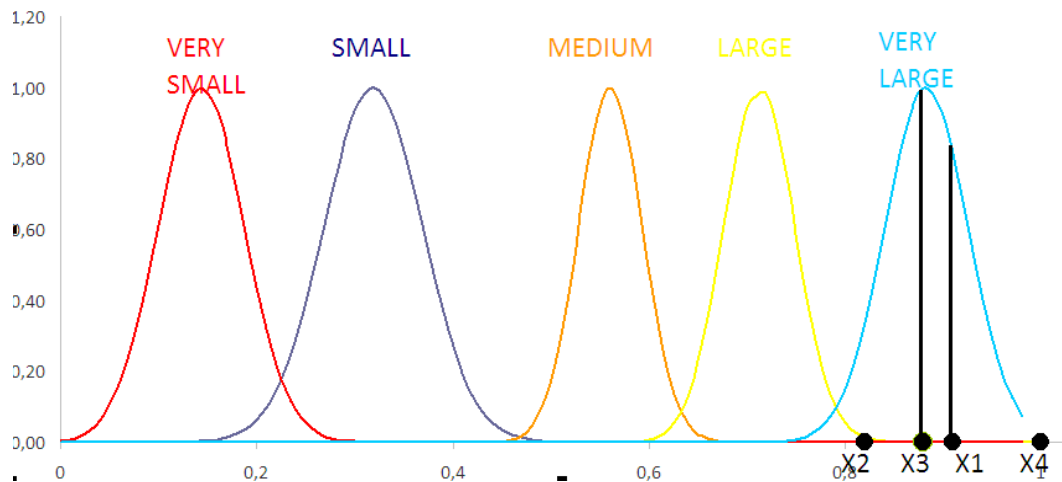

$$M1 = 5.796e\text{-}26 * 0.0123 * 9.922e\text{-}28 * 1.896e\text{-}83 = 1.344e\text{-}137$$

For 2 rule (IF x1 is large AND x2 is large AND x3 is medium AND x4 is medium THEN Versicolor):

$$M2 = 3.571e\text{-}7 * 1.221e\text{-}14 * 8.12e\text{-}22 * 1.238e\text{-}40 = 4.385e\text{-}82$$

For 3 rule (IF x1 is very large AND x2 is large AND x3 is very large AND x4 is very large THEN Virginica):

$$M3 = 0.814 * 0.012 * 0.997 * 0.022 = 0.00022$$

Then:

$$Y = 0.00067 / 0.000223 = 3$$