Random

Random function. The output value of this function is a random mixture of two different linear functions of the input value. Sometimes you get the first linear function as output. Other times you get the second linear function.

The "a" parameter contains the probability of getting the first linear function. This implies that the probability of getting the second linear function is (1- a). Since "a" is a probability, you should always specify "a" to be a number between 0 and 1. If you specify an "a" value that is greater than 1, DynRisk will replace this by 1 in the calculations. Similarly, if you specify an "a" value that is negative, DynRisk will replace this by 0 in the calculations.

The "b" and "c" parameters are respectively the coefficient of the first order term and the constant term in the first linear function. The "d" and "e" parameters are respectively the coefficient of the first order term and the constant term in the second linear function.

Assume e.g., that the input value of the edge is the cost of a certain item given that this is purchased from a certain company. In, say one out of four times, however, this company is not able to deliver this item. In such situations, the item must be purchased from a company. The second company is located in another country, and you must pay a 10% duty when you buy from them, as well as a fixed shipping cost of 100 dollars. Such a situation can easily be modeled by using the "Random" function. To do this, you enter the probability of getting the item from the first company, i.e., 0.75, into the "a" field. Given that the item is purchased from the first company, no further transformation is needed. Thus, you enter 1 into the "b" field and 0 into the "c" field. The case when the item is purchased from the second company, is modeled through the second linear function. Specifically, you enter 1.1 into the "d" field to cover the 10% duty, and 100 into the "e" field to cover the shipping cost.

Default parameter values:

a = 0.5, b = 1, c = 0, d = 0, e = 0

Example:

a = 0.5, b = 2, c = 1.5, d = 0.5, e = 0.8

Input = 4.2   =>   Output =
2.9 or 9.9

Input = 8.1   =>   Output = 4.85 or 17.7