

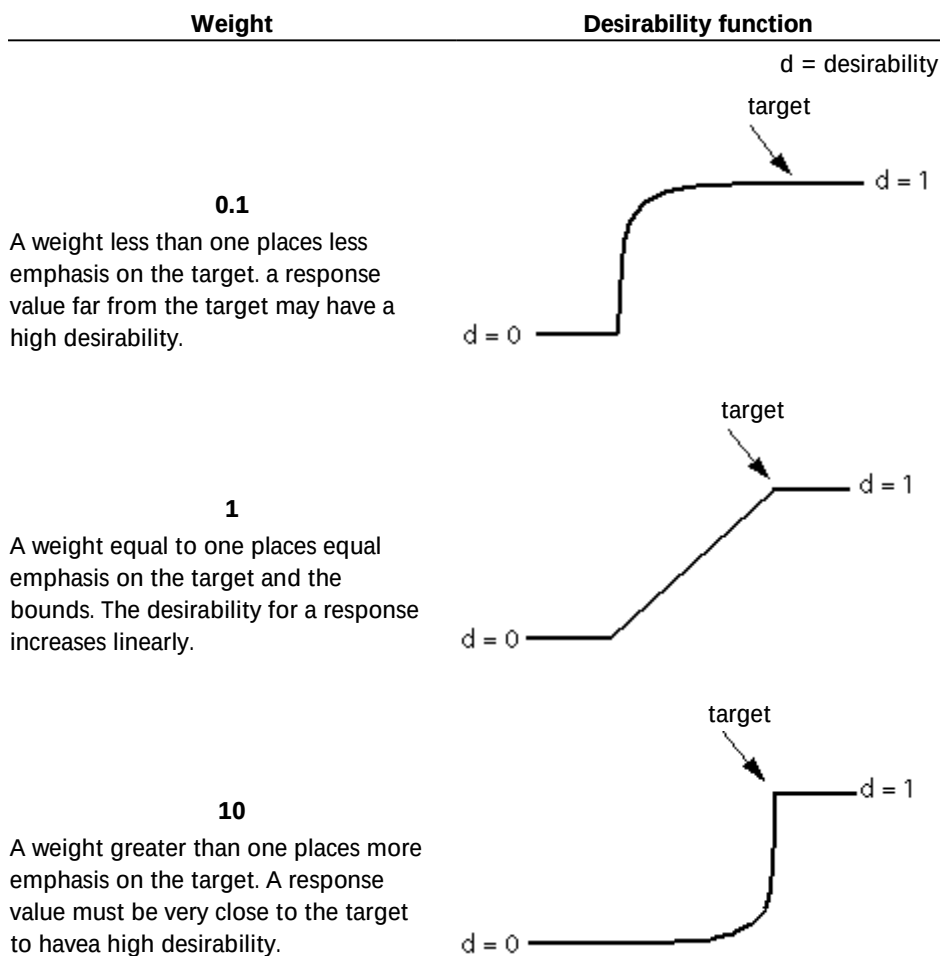


Setting the Weight for the Desirability Function

In Minitab's approach to optimization, each of the response values are transformed using a specific desirability function. The weight defines the shape of the desirability function for each response. For each response, you can select a weight (from 0.1 to 10) to emphasize or de-emphasize the target. A weight

- less than one (minimum is 0.1) places less emphasis on the target
- equal to one places equal importance on the target and the bounds
- greater than one (maximum is 10) places more emphasis on the target

The illustrations below show how the shape of the desirability function changes when the goal is to maximize the response and the weight changes:

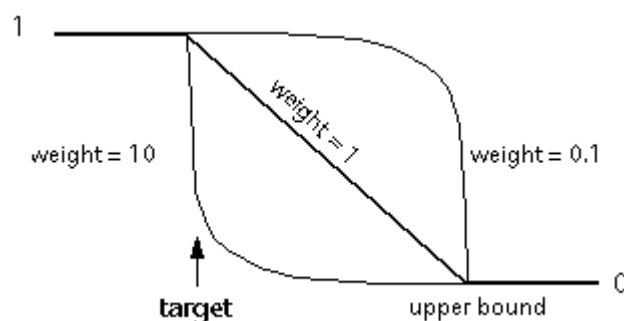


The illustrations below summarize the desirability functions:

When the goal is to ...

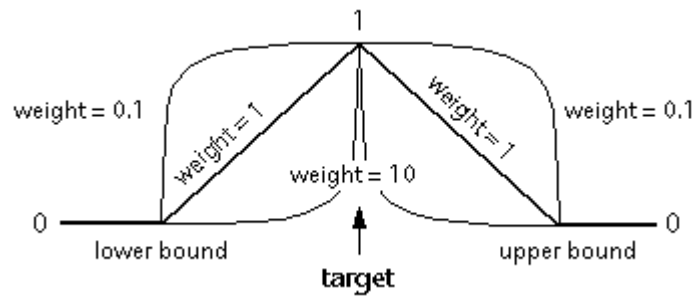
minimize the response

Below the target the response desirability is one; above the upper bound it is zero.



target the response

Below the lower bound the response desirability is zero; at the target it is one; above the upper bound it is zero.

**maximize the response**

Below the lower bound the response desirability is zero; above the target it is one.

