a. The population of a certain species is decreasing at a rate that is twice its current value.

Continuous

$x(t)= -2x(t)$

b. The population of a certain species changes from one generation to the next. The value at a given generation is one-half of its value at the previous generation.

Discrete

$x(n-1)=½x(n-2)$

c. The population of a certain species changes from one generation to the next. The value at a given generation is twice its value at the previous generation times (1 minus its value at the previous generation).

Discrete

$x(n-1)=2x(n-2)*(1-x(n-2))$

d. The population of a certain species scaled such that the maximum possible is 1 is increasing at a rate that is twice its current value times (1 minus its current value).

Continuous

$x(t)= 1-2x(t)$