1

Hare Population Equation

*dH dt*

= *rGrowth ×H*

*− rEat ×H ×F*

Change in Hare Population

Growth Rate times

Hare population

Eat Rate of

Hare population by

Lynx population

Lynx Population Equation

*dF dt*

Change in

L

= *−rDeath ×F* + *rFood ×F ×H*

Food Rate that

Lynx population

ynx Population

Death Rate times

Lynx population

consumes

the Hare population

2

~~Predicting Hare Population by Adding and Subtraction~~

*HFuture* = *HCurrent* + ∆*t × rGrowth ×HCurrent − rEat ×HCurrent × FCurrent*

time-step

Future Hare Population

Current Hare Population

Growth Rate times

Hare population

Eat Rate of

Hare population by

Lynx population

~~Predicting Lynx Population by Adding and Subtraction~~

*FFuture* = *FCurrent* + ∆*t × −rDeath × FCurrent* + *rFood × FCurrent ×HCurrent*

time-step

Future Lynx Population

Current Lynx Population

Death Rate times

Lynx population

Food Rate of

Lynx population consumes

the Hare population

3

~~Predicting a Differential Equation by Adding and Subtraction~~

*rFuture* = *FCurrent* + ∆*t × −rDeath × FCurrent* + *rFood × FCurrent ×HCurrent*

time-step

Future Lynx Population

Current Lynx Population

Death Rate times

Lynx population

Food Rate of

Lynx population consumes

the Hare population