R # of red troups
B # of blue troups

Every iteration simulates how many of each are left

$R_{n+1} = R_n + \Delta R_n$ $\Delta R_n = -D_R - I_R = -a_1 B - b_1 RB$

$B_{n+1} = B_n + \Delta B_n$ $\Delta B_n = -D_B - I_B = -a_2 R - b_2 RB$

Idea let $a_1 = \lambda a_2$ and $b_1 = \lambda b_2$

effectiveness of blue against red is λ better than red against blue...

What is the timescale for each iteration... each iteration is 1 hour

$\Delta R_n = R_{n+1} - R_n = -a_1 B - b_1 RB$

change over an hour...

rate of attrition per hour

rate of attrition per troup present.

With nonlinear terms you need dimensional constants... thus b_1 and b_2 are dimensional.

note depending on units of measurement for troups, then the numerical value of b_1 changes

```
n=2 R=4.85 B=1.709
n=3 R=4.7231067499999995 B=1.43248571532125
n=4 R=4.617653549477375 B=1.1685294241077373
n=5 R=4.53224775805749 B=0.9154367118916803
n=6 R=4.465730992537333 B=0.6717096917848079
n=7 R=4.417147134005137 B=0.43601713238479733
n=8 R=4.385716518252444 B=0.20717006877346977
n=9 R=4.370815068850234 B=-0.015898194961091072
n=10 R=4.371957418948806 B=-0.23414853475149122
```

```
10×2 Matrix{Float64}:
 5.0       2.0
 4.85      1.709
 4.72311   1.43249
 4.61765   1.16853
 4.53225   0.915437
 4.46573   0.67171
 4.41715   0.436017
 4.38572   0.20717
 4.37082  -0.0158982
 4.37196  -0.234149
```