

Answers to WS 2

1. a. $\Delta F = 0.008F - 40$

b. $F(t + 1) = 1.008F(t) - 40.$

c. 936; 668

2. a. $\Delta P = -10; P(t) = 2500 - 10t$

b. 2350

3. a. $\Delta N = 1 - \frac{1}{3}N$

b.

t	1	2	3	4	5	6	7
N	1	1.67	2.11	2.4	2.6	2.74	2.82

c. the value will stabilize at 3 mg

4. $\Delta R = 0.085R; R(t) = 600(1.085)^t; t_{dbl} = 8.5$

5. $\frac{dR}{dt} = 0.085R; R(t) = 600e^{0.085t}; t_{dbl} = 8.15.$

6.

n	0	10	20	30	40	50
u	10	16.7	17.4	17.5	17.5	17.5

long term: the values stabilize at 17.5

7.

n	0	10	20	30	40	50
h	100	146.1	171	184.4	191.6	195.5

long term: the values stabilize at 200