a. 1.1, #1c

Solution. $\{4, 56, 6608, 87370976, 1.5267375419 \times 10^{16}\}$

b. 1.1, #1d

Solution. $\{1, 1, 1, 1, 1\}$

c. 1.1, #2a

Solution. $a_{n+1} = 3, a_0 = 3$

d. 1.1, #2d

Solution. $a_{n+1} = 2^n + a_n, a_0 = 1$

e. 1.1, #3c

Solution. $a_{n+1} = a_n + a_{n-1} + \cdots + a_0 + n, a_0 = 1$

f. 1.1, #3d

Solution. $a_{n+1} = 7(3^n) + a_n, a_0 = 1$

g. 1.1, #4a

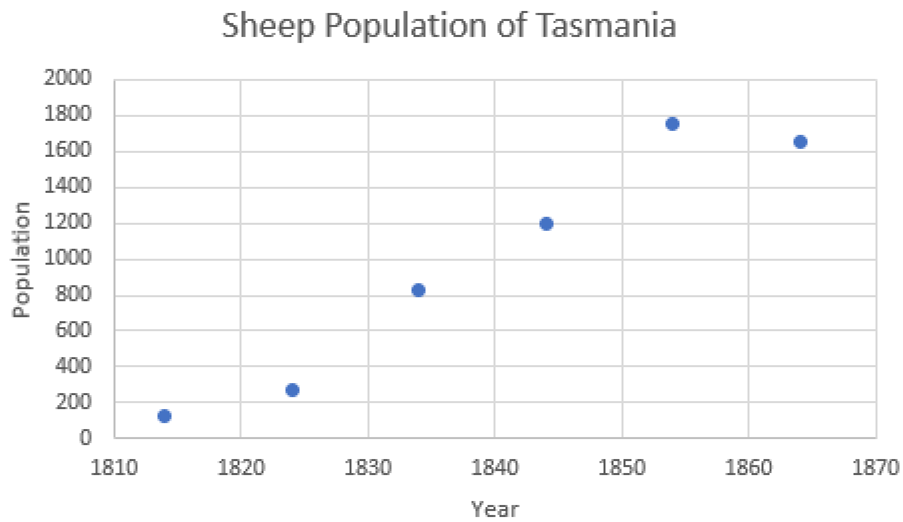
Solution. $\{1, \frac{1}{2}, \frac{1}{4}, \frac{1}{8}, \frac{1}{16}\}$

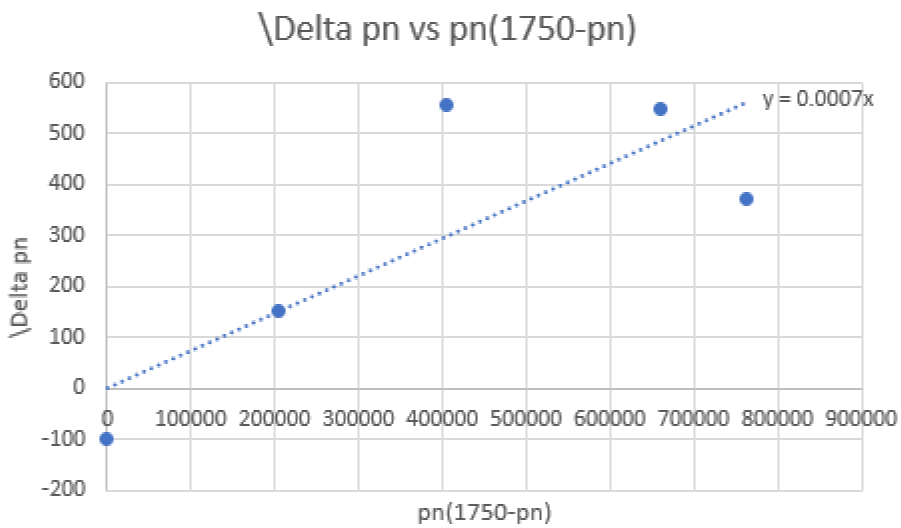
h. 1.1, #5c

Solution. $\{4, 56, 6608, 87370976\}$

i. 1.2, #1

Solution.





By using the difference equation for logistic regression $\Delta p_{n+1} = kp_n(M - p_n)$, and the Sheep population of Tasmania, we can assume the carrying capacity is 1750. So, using 1750 as our carrying capacity, we can plot the Δp_n vs $pn * (1750 - pn)$ on a graph. With this graph, we can also fit a linear regression line to find our value of k to model our difference equation:

$$\Delta p_{n+1} = .0007p_n(1750 - p_n)$$