

# Math 1160 – Section 11.2 Answer Key

2.  $y_n = 50 - 2n$

6.  $y_{20} = 80(1.02)^{20}$

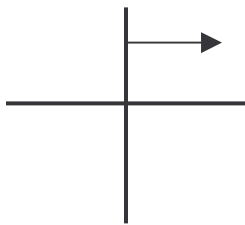
8.  $y_{10} = 80(1.06)^{10}$

12a.  $y_0 = 10$

$$y_1 = 1/2(10) + 5 = 10$$

$$y_2 = 1/2(10) + 5 = 10$$

$$y_3 = 1/2(10) + 5 = 10$$



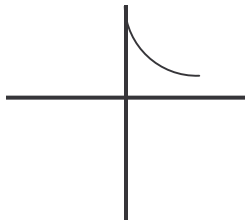
Points (0, 10) (1, 10) (2, 10) (3, 10)

12b.  $y_0 = 18$

$$y_1 = 1/2(18) + 5 = 14$$

$$y_2 = 1/2(14) + 5 = 12$$

$$y_3 = 1/2(12) + 5 = 11$$



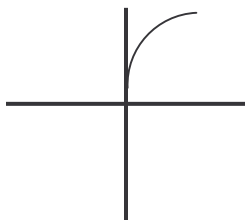
Points (0, 18) (1, 14) (2, 12) (3, 11)

12c.  $y_0 = 2$

$$y_1 = 1/2(2) + 5 = 6$$

$$y_2 = 1/2(6) + 5 = 8$$

$$y_3 = 1/2(8) + 5 = 9$$



Points (0, 2) (1, 6) (2, 8) (3, 9)

14.  $y_n = 6 + 4(3)^n$

Since  $a$  is positive, the graph is monotonic. Since the absolute value of  $a$  is greater than 1, the graph is unbounded. Upon observation, as  $n$  gets larger,  $y_n$  gets larger.

16.  $y_n = 2 + 1(-.7)^n$

Since  $a$  is negative, the graph oscillates. Since the absolute value of  $a$  is less than 1, the graph is attracted to the value  $b/1-a$ . As  $n$  gets larger,  $y_n$  approaches 2.

34. The terms approach 10 (which is  $b/1-a$ ). These terms are oscillating ( $a$  is negative) and attracted to  $b/1-a$  (absolute value of  $a$  is less than 1).