HW24

p. 684:

18. $a_1 = 2$, $a_2 = 2^2 + 2 = 6$, $a_3 = 6^2 + 2 = 38$,
$a_4 = 38^2 + 2 = 1446$, $a_5 = (1446)^2 + 2 = 2,090,918$

20. $a_1 = 10$, $a_2 = 30$, $a_3 = 90$, $a_4 = 270$, $a_5 = 810$

24. $a_0 = 4$, $a_1 = 2$, $a_2 = 2 - 4 = -2$, $a_3 = -2 - 2 = -4$,
$a_4 = -4 - (-2) = -2$

27. $a_1 = 3$, $d = 10$
explicit rule: $a_n = 3 + (n-1)10$ recursive: $a_1 = 3$
$a_n = 10n - 7$ $a_n = a_{n-1} + 10$

31. $a_1 = 5$, $r = 2.5$
explicit rule: $a_n = 5(2.5)^{n-1}$ recursive $a_1 = 5$
$a_n = 2.5(a_{n-1})$

36. $a_1 = 66$, $a_n = \frac{1}{2}(a_{n-1})$

38. $a_1 = 3$, $a_n = (a_{n-1})^2 - 1$

40. $a_1 = 7.2$, $a_n = a_{n-1} - 4$

42. $a_1 = 6$, $a_n = \sqrt{2}(a_{n-1})$

51. $a_1 = 20$
$a_2 = .7(20) + 20$

So $a_1 = 20$
$a_n = .7(a_{n-1}) + 20$

p. 687

2. $a_1 = 5$, $r = -\frac{6}{7}$ $\quad S = \frac{5}{1-(-6/7)} = \frac{5}{13/7} = \frac{35}{13}$

6. $S = 12, a_1 = 1$

$12 = \frac{1}{1-r}$

$12 - 12r = 1$

$11 = 12r$

$11/12 = r$

10. $S = \frac{126}{1-.001}$

$= \frac{126}{.999}$

$= \frac{14}{.111} = \frac{14000}{111}$