EXERCISE 8A

1 a 7, 14, 21, 28, 35

b 13, 8, 3, −2, −7

c. 4, 12, 36, 108, 324

d. $6, 3, \frac{3}{2}, \frac{3}{4}, \frac{3}{8}$

e. 2, 7, 22, 67,

f. 1, 4, 19,

2a $U_1 = 2,\ U_{r+1} = U_r + 2$

b $U_1 = 11,\ U_{r+1} = U_r - 2$

c $U_1 = 2,\ U_{r+1} = U_r + 4$

d $U_1 = 2,\ U_{r+1} = 3U_r$

e. $U_1 = \frac{1}{3},\ U_{r+1} = \frac{1}{3}U_r$

f $U_1 = \frac{1}{2}a,\ U_{r+1} = \frac{1}{2}U_r$

g. $U_1 = b-2c,\ U_{r+1} = U_r + c$ (b−2c, b−c, b, b+c)

h. $U_1 = 1,\ U_{r+1} = -U_r$

i $U_1 = \frac{p}{q^3},\ U_{r+1} = qU_r$

j. $U_1 = \frac{a^3}{b^2},\ U_{r+1} = \frac{b}{a}U_r$

k $U_1 = x^3,\ U_{r+1} = \frac{5}{x}U_r$

l. $U_1 = 1,\ U_{r+1} = (1+x)U_r$

3a. $U_r = 2r + 3$

5, 7, 9, 11, 13

$U_1 = 5,\ U_{r+1} = U_r + 2$

b $U_r = r^2$

1, 4, 9, 16, 25

$U_1 = 1,\ U_{r+1} = U_r + 2r + 1$

c. $U_r = \frac{1}{2}r(r+1)$

1, 3, 6, 10, 15

$U_1 = 1,\ U_{r+1} = U_1 + r + 1$

d. $U_r = \frac{1}{6}r(r+1)(2r+1)$

1, 5, 14, 30, 55

$U_1 = 1,\ U_{r+1} = U_r + (r+1)^2$

e $U_r = 2 \times 3^r$

6, 18, 54, 162, 486

$U_1 = 6,\ U_{r+1} = 3U_r$

f $U_r = 3 \times 5^{r-1}$

3, 15, 75, 375, 1875

$U_1 = 3,\ U_{r+1} = 5U_r$

4 a $U_r = 10 - r$

b $U_r = 6.3^{r-1} = 2.3^r$

c. $U_r = 3 + r^2$

d $U_r = 2n^2 + 2n$

e. $U_r = \frac{2r-1}{r+3}$

f $U_r = \frac{r^2+1}{2^r}$