

(1) a)  $a_n = 2n$       b)  $a_n = 2n-1$       c)  $a_n = 1/n$

$a_1 = 2$

$a_2 = 4$

$a_3 = 6$

$a_4 = 8$

$a_5 = 10$

$a_1 = 1$

$a_2 = 3$

$a_3 = 5$

$a_4 = 7$

$a_5 = 9$

$a_1 = 1$

$a_2 = 1/2$

$a_3 = 1/3$

$a_4 = 1/4$

$a_5 = 1/5$

(2) a)  $a_1 = 4$   
 $a_2 = 7$   
 $a_3 = 10$   
 $a_4 = 13$   
 $a_5 = 16$   
 $a_6 = 19$   
 $\vdots$   
 $a_n = 3n+1$

b)  $a_1 = 15$   
 $a_2 = 13$   
 $a_3 = 11$   
 $a_4 = 9$   
 $a_5 = 7$   
 $a_6 = 5$   
 $\vdots$   
 $a_n = 17-2n$

c)  $a_1 = 2$   
 $a_2 = 5.8$   
 $a_3 = 9.6$   
 $a_4 = 13.4$   
 $a_5 = 17.2$   
 $a_6 = 21$   
 $\vdots$   
 $a_n = 3.8n-1.8$

(3) a)  $a_n = 4n+3$ ;  $a_{15} = 63$ ;  $S_{15} = 525$

b)  $a_n = 2n+1$ ;  $a_6 = 13$ ;  $S_6 = 48$

c)  $a_n = 14-2n$ ;  $a_{23} = 32$ ;  $S_{23} = -230$

(4)  $a_1 = 0$   
 $a_2 = 3$   
 $a_3 = 6$   
 $\vdots$   
 $a_{21} = 60$   
 $\vdots$   
 $a_n = 3n-3$

(5) a)  $\dots, \frac{343}{1152}, \frac{2401}{9216}$

b)  $\dots, \frac{1}{8}, \frac{1}{16}$

c)  $\dots, \frac{1}{1000}, \frac{1}{10000}$

(6)  $0.1 \text{ km}^2$