1.-

a) $a_n = n^2 + 2$

b) $a_{100} = 10002$

2.-

a) $a_n = 4 - 3n$ $1, -2, -5, -8, -11$

b) $a_n = \dfrac{3n-2}{n}$ $1, 2, \dfrac{7}{3}, \dfrac{5}{2}, \dfrac{13}{5}$

c) $a_n = \dfrac{5n-2}{3n}$ $1, \dfrac{4}{3}, \dfrac{13}{9}, \dfrac{3}{4}, \dfrac{23}{15}$

d) $a_n = \dfrac{n^2-5}{2n}$ $-2, -\dfrac{1}{4}, \dfrac{2}{3}, \dfrac{11}{8}, 2$

3.-

a) $a_n = 2 + 3n$; $d = 3$; $a_{20} = 62$ b) no

c) no   d) $a_n = 24n - 21$; $d = 24$; $a_{20} = 459$

4.-

$a_n = 16n - 22$; $d = 16$; $a_{30} = 458$

5.-

$a_n = 6 \cdot 4^{n-1}$; $a_{10} = 1572864$

6.-

a) $a_n = 2^n$; $a_{10} = 1024$ b) $a_n = 4 \cdot (-1)^{n-1}$; $a_{10} = -4$

c) $a_n = \dfrac{2^{n-2}}{3^{n-1}}$; $a_{10} = \dfrac{256}{19683}$ d) $a_n = 2^{2-n}$; $a_{10} = 3'9 \cdot 10^{-3}$

7.-

a) no   b) $r = 2$

c) $r = 2$ d) $r = \dfrac{1}{2}$

8.-

$S_8 = 510$

9.-

$S = 9$

10.-

$a_1 = 6$