

1.  $d = 1.5, a_{100} = 149.8$

2.  $a_{20} = 48$

3.  $r = -\frac{1}{3}, a_n = 27 \cdot \left(-\frac{1}{3}\right)^{n-1}$

4.  $s_{23} = \frac{621}{2}$

5. Converges to 1

6.  $d = -7, a_{100} = -684$

7.  $d = \frac{5}{2}, a_{100} = \frac{501}{2}$  (or 250.5)

8.  $r = -\frac{1}{2}, a_n = 10 \cdot \left(-\frac{1}{2}\right)^{n-1}$

9.  $r = \frac{4}{3}, a_n = \frac{3}{5} \cdot \left(\frac{4}{3}\right)^{n-1}$

10. 1025 (Note: arithmetic sequence)

11.  $\frac{175099}{256}$  (Note: geometric sequence)

12.  $\frac{4039}{10935}$  (Note: geometric sequence)

13.  $-\frac{35}{2}$  (Note: arithmetic sequence)

14. Converges to  $\frac{8}{7}$ 15. Converges to  $\frac{250}{3}$ 

16. Diverges

17. Diverges