

1. Identify the following as arithmetic, geometric or neither.

a) $2, 10, 18, 26, 32, \dots$

b) $1, \frac{1}{3}, \frac{1}{9}, \frac{1}{27}, \frac{1}{81}, \dots$

c) $1, 4, 9, 16, 25, \dots$

2. Write the first 4 terms of the sequence.

a) $a_n = 2n - 5$

b) $a_n = 4 \cdot 2^{n-1}$

c) $a_k = \frac{6}{k}$

d) $a_j = 36 \left(-\frac{1}{2} \right)^{j-1}$

e) $a_n = n^2 - 6$

f) $a_1 = 270, r = \frac{1}{3}$

3. Write a rule for the n th term of the following arithmetic sequences.

a) $a_1 = 7, d = -3$

b) $a_5 = -12, d = 2$

c) $a_{13} = -43, d = -\frac{7}{2}$

4. Write a rule for the n th term of the following arithmetic sequences.

a) $a_5 = 27, a_{13} = 75$

b) $a_3 = 1, a_{11} = -15$

c) $a_6 = -\frac{7}{2}, a_{13} = -7$

5. Write a rule for the n th term of the following geometric sequences.

a) $a_5 = 405, r = 3$

b) $a_4 = 16, r = 4$

c) $a_6 = -192, r = -2$

6. Write a rule for the n th term of the following geometric sequences.

a) $a_4 = 54, a_9 = 13,122$

b) $a_3 = 9, a_6 = \frac{1}{3}$

c) $a_2 = 180, a_5 = -\frac{45}{2}$

7. Find the following sums, if they exist. (Some are arithmetic, some are geometric).

a) $\sum_{j=1}^{10} 4j - 2$

b) $\sum_{i=1}^{\infty} 8\left(\frac{2}{3}\right)^{i-1}$

c) $\sum_{k=1}^9 6(5)^{k-1}$

d) $\sum_{i=1}^{\infty} \left(\frac{1}{4}\right)\left(\frac{5}{4}\right)^{i-1}$

e) $\sum_{i=5}^{13} -2i + 12$

f) $\sum_{n=1}^{12} 2\left(\frac{3}{2}\right)^{n-1}$

8. Write the repeating decimal as a fraction.

a) $.777\overline{7}$

b) $.8181\overline{81}$

c) $.31818\overline{18}$

9. Solve for n .

a) $\sum_{j=1}^n (5 - 5j) = -50$