

Assignment-Sequence

Date _____

Given two terms in an arithmetic sequence find the common difference and the term named in the problem.

1) $a_{15} = 248$ and $a_{32} = 588$
Find a_{37}

2) $a_{13} = 1214$ and $a_{33} = 3214$
Find a_{21}

3) $a_{13} = -\frac{31}{10}$ and $a_{39} = -\frac{353}{30}$
Find a_{32}

4) $a_{19} = -53.6$ and $a_{34} = -94.1$
Find a_{30}

Given two terms in a geometric sequence find the common ratio, the 8th term, and the explicit formula.

5) $a_3 = 100$ and $a_6 = 12500$

6) $a_3 = 16$ and $a_2 = 4$

7) $a_1 = 2$ and $a_2 = 6$

8) $a_2 = 9$ and $a_5 = -243$

Evaluate each infinite geometric series described.

9) $-3 - \frac{3}{4} - \frac{3}{16} - \frac{3}{64} \dots$

10) $4 + 2 + 1 + \frac{1}{2} \dots$

Answers to Assignment-Sequence

1) Common Difference: $d = 20$
 $a_{37} = 688$

2) Common Difference: $d = 100$
 $a_{21} = 2014$

3) Common Difference: $d = -\frac{1}{3}$

4) Common Difference: $d = -2.7$
 $a_{30} = -83.3$

$$a_{32} = -\frac{283}{30}$$

5) Common Ratio: $r = 5$
 $a_8 = 312500$

6) Common Ratio: $r = 4$
 $a_8 = 16384$

7) Common Ratio: $r = 3$
 $a_8 = 4374$

Explicit: $a_n = 4 \cdot 5^{n-1}$

Explicit: $a_n = 4^{n-1}$

Explicit: $a_n = 2 \cdot 3^{n-1}$

8) Common Ratio: $r = -3$
 $a_8 = 6561$

9) -4

10) 8

Explicit: $a_n = -3 \cdot (-3)^{n-1}$

