

Sequences and Series

5-7-08

For the following lists of numbers answer:

- a. Find the next 3 terms and the 30th.
- b. Describe how you found them.
- c. Is there more than one way to describe each?
- d. Describe the characteristics of each.

1. 4, 7, 10, 13, 16,

2. 2, 6, 18, 54, 162,

3. $5, 4, \frac{16}{5}, \frac{64}{25}, \frac{256}{125}, \frac{1024}{625}, \dots$

4. 1, 1, 2, 3, 5, 8, 13,

Sequences and Series

5-7-08

1. Find the first 6 terms and the 100th term of the explicitly-defined sequence.

$$d_n = n^2 - 5n$$

2. Find the first 4 terms and the 8th term of the recursively-defined sequence.

$$v_1 = 0.75 \text{ and } v_n = (-2)v_{n-1}, \text{ for } n \geq 2$$

3. Find a recursively rule and an explicit rule for the nth term.

3, 7, 10, 13, 16,

Sequences and Series

5-7-08

4. Find a recursively rule and an explicit rule for the nth term.
2, 6, 18, 54, 162,

5. For the following arithmetic sequence,

-4, 1, 6, 11,

Find:

- the common difference,
- the tenth term,
- a recursive rule for the nth term, and
- an explicit rule for the nth term.

Sequences and Series

5-7-08

6. For the following geometric sequence,

3, 6, 12, 24,

Find:

- a. the common ratio,
- b. the eighth term,
- c. a recursive rule for the n th term, and
- d. an explicit rule for the n th term.