**Colorado Technical University**

**Course:** MATH116 – Foundations for Calculus

**Unit 7 Part 14 Readings: Sequences**

#### Sequences

A **sequence** is an ordered collection of numbers

### Terms: a1, a2, a3, ..., an, ...

**General term** - a function containing "n"

### Infinite sequence {an} - function with domain of positive integers

**Finite sequence** - only the first n positive integers

**Evaluate** by plugging in the requested numbers for each term

**Recursion formula** - the formula is based on the previous term

**Arithmetic Sequence**

## Each term in the sequence (after the first) differs from the preceding by a

## constant amount (positive or negative)

### Notation: start with a1

increase each time by "d"

General term of an arithmetic sequence: an = a1 + (n1)d

**Geometric Sequence**

## Each term in the sequence (after the first) is a common

## multiple (positive or negative) of the previous term

General term of a geometric series: an = a1 r n1

**Limit** of a sequence – does it get bigger or smaller?

