

1. Do WebAssign 9.1. Remember that the WebAssign will be reopened three days before Exam III for you to review the problems. You will be allowed to improve your score by a maximum of three points. Additional attempts will not be given.

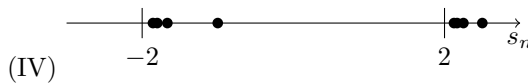
2. Match the formulas (a)-(e) with the descriptions (I)-(V) of the behavior of the sequence as  $n \rightarrow \infty$ .

- (a)  $s_n = n(n + 1) - 1$
- (b)  $s_n = 1/(n + 1)$
- (c)  $s_n = 1 - n^2$
- (d)  $s_n = \cos(1/n)$
- (e)  $s_n = (\sin(n))/n$

- (I) Diverges to  $-\infty$
- (II) Diverges to  $+\infty$
- (III) Converges to 0 through positive numbers.
- (IV) Converges to 1
- (V) Diverges to 0 through positive and negative numbers.

3. Match formulas (a)-(e) with graphs (I)-(V).

- (a)  $s_n = 2 - 1/n$
- (b)  $s_n = (-1)^n 2 + 1/n$
- (c)  $s_n = 2 + (-1)^n/n$
- (d)  $s_n = 2 + 1/n$
- (e)  $s_n = (-1)^n 2 + (-1)^n/n$



4. A 2000-lb weight is being lifted to a height 10 feet off the ground. It is lifted using a rope which weighs 4lb per foot and which is being pulled up by construction workers standing on a roof 30 feet off the ground Find the work done to lift the weight,

# Geometric Series

Section 9.2  
October 18, 2016

Name:  
Math 129 - 01

Understand	Identify whether or not a series is a geometric series
Apply	Calculate the sum of a finite geometric series.
Apply	Calculate the sum of an infinite geometric series.
Understand	Use the terminology “converges” and “diverges” to express the limit of the sum of a series
Understand	Know the condition for the sum of a geometric series to converge.

1. Marty McFly is feeling ill from too much time travel, so Doc administers a course of super vitamins. Doc gives Marty one 400 mg tablet every four hours. It is known that at the end of four hours, 25% of the vitamins have been retained in the body, and 75% of the vitamins have been eliminated.  
What quantity of super vitamins are in the body immediately after the first tablet is taken? (Assume that the vitamins are absorbed instantly.)

What quantity of super vitamins are in the body immediately before the second tablet is taken?

What quantity of super vitamins are in the body immediately after the second tablet is taken?

What quantity of super vitamins are in the body immediately after the third tablet is taken?

What quantity of super vitamins are in the body immediately after the  $n^{\text{th}}$  tablet is taken?

Quiz (Leave this space blank)