

Math Grades 9 – 12
Limits

MA.912.C.1.2

A Short Account of the History of Mathematics

"Bonaventura Cavalieri"

W. W. Rouse Ball

Reading Level: 12

Activity:

The following is stated in the reading, "Cavalieri proved that, if m be a positive integer, then the limit, when n is infinite, of $(1^m + 2^m + \dots + n^m)/n^{m+1}$ is $1/(m+1)$ "
Use this information to do the problems below.

1. Find the limit of the series when $m=7$.

2. The formula states that m must be positive. Explain why m cannot be less than or equal to zero.