SECONDARY MATH 3

**CORE STANDARDS**

A.SSE.4

LESSON

**7-1**

OBJECTIVE **1.** I can evaluate a series with and without technology.

NOTES Sequence: a list of terms where $a\_{1}$ and $a\_{n}$ is the nth term.

Series: the sum of a sequence.

Geometric series: sum of a sequence $S=a+ar+ar^{2}+…+ar^{n}+…$, where $a$ is the first term and $r$ is the common ratio.



EXAMPLES Write out and evaluate each sum.



1. 2. 3.

4. Use Technology to find the sum of $\sum\_{k=5}^{20}k^{2}+2k$

5. Write in Sigma notation.



PRACTICE **7-1** NAME\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 [SHOW YOUR WORK]

 Write out and evaluate each sum.

1. $\sum\_{k=2}^{6}\frac{1}{k^{2}}$
2. $\sum\_{k=1}^{5}3k-2$
3. $\sum\_{k=1}^{5}2^{k}-1$
4. $\sum\_{k=1}^{4}\left(-1\right)^{k}k$
5. $\sum\_{k=3}^{7}\frac{k}{k+2}$
6. $\sum\_{k=1}^{5}2k+1$

Write each series using sigma notation.

1. $5+7+9+…+17$
2. $6+5+4+…+\left(-1\right)$
3. $\frac{1}{2}+\frac{1}{4}+\frac{1}{6}+…+\frac{1}{20}$
4. $1+4+9+16+…+49$
5. $37+34+31+…+13$
6. $\frac{3}{4}+\frac{4}{9}+\frac{5}{16}+…+\frac{9}{64}$
7. $3+6+9+12+…+384$