Unit 8 Project

1. Find the next five terms of the arithmetic sequence 42, 37, 32, … .
2. Find the 24*th* term of an arithmetic sequence for which $a_1 = 2$ and $d = 6$.
3. Find the three arithmetic means between -4 and 16.
4. Find the sum of the arithmetic series for which $a_1 = 7$, $n = 31$, and $a_n = 127$.
5. Find the next three terms of the geometric sequence 81, 27, 9, … .
6. Find the eight term of the geometric sequence for which $a_1 = 5$ and $r = -2$.
7. Find two geometric means between 7 and 189
8. Find the sum of the geometric series for which $a_1 = 125$, $r = \frac{2}{5}$, and $n = 4$.

Find the sum of each series, if it exists.

9. $\sum_{k=3}^{15} (14 - 2k)$
10. 91 + 85 + 79 + … + (-29)

Find the first five terms of each sequence.

11. $a_1 = 2$, $a_{n+1} = a_n + 3$
12. $a_1 = -4$, $a_{n+1} = a_n + n^2$

Find the variance, mean, median, mode, and standard deviation for the given values.

13. 13, 15, 12, 10, 4, 16, 17, 22, 9

14. Use the data that shows the ages of the U.S. population to create a histogram. Tell whether the data is positively skewed, negatively skewed, or if it has a normal distribution.

U.S. Population	
Age	Percent
0–19	28.7
20–39	29.3
40–59	25.5
60–79	13.3
80–99	3.2
100+	0.0

Source: U.S. Census Bureau

15. The number of home runs scored by teams in the Brooksfield baseball league are normally distributed and have a mean of 94 and a standard deviation of 8. What percentage of the teams have scored more than 102 home runs?

Find the margin of error with the given conditions. Round to four decimal places.

16. p = 33% and n = 600.
17. 200 high school students were surveyed about whether they driving or taking the bus to school. 145 preferred driving.