8-4 Lesson Master

SKILLS Objective C

In 1–6, evaluate the arithmetic series.

1. \( \sum_{n=1}^{6} (3n - 5) \)
2. \( \sum_{i=1}^{5} (2i + 3) \)
3. \( \sum_{k=1}^{7} (-5 - 1k) \)
4. the sum of the first fifty positive integers
5. \( \sum_{x=1}^{200} 23n \)
6. \( \sum_{i=1}^{200} (17 - 2i) \)
7. The sum of the smallest \( k \) positive multiples of 5 is 275. Find \( k \).

USES Objective G

8. To build up strength, Arnold started an exercise program in which he did 10 repetitions of bicep curls with each arm three times each week. He began lifting 10 lb weights, so the first week he lifted a total of \( 10 \cdot 2 \cdot 3 \cdot 10 = 600 \) lb. He added one additional lb to the weights each week until he reached a total of 30 lb. What is the total amount of weight Arnold lifted during this 21-week period?

9. The roof of a shed is supported by 15 evenly spaced joists, as shown at the right. One side of the roof has a length of 9 ft and makes a 36º angle with the horizontal.

a. Use \( \Sigma \)-notation to write the series representing the total length of joists for one side of the roof for one end of the shed.

b. Find the total length of the joists used for both ends of the shed.