# CHAPTER Quiz

### Lessons 12-4 to 12-5

### Select the best answer.

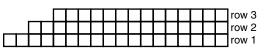
- 1. What is the common ratio of the sequence  $\frac{3}{100}$ ,  $\frac{3}{50}$ ,  $\frac{3}{25}$ ,  $\frac{3}{12.5}$ ,...?

**C** 2

- **D** 6
- 2. Vivica has a colony of bees that produced 15 pounds of honey in the first year. As the colony grows, it produces 9% more honey each year. Approximately how much honey will the colony produce during the 7th year?
  - **F** 22 lb
- **H** 25 lb
- **G** 24 lb
- **J** 27 lb
- **3.** What is  $S_6$  for the geometric series  $0.25 - 0.75 + 2.25 - 6.75 + \dots$ ?
  - A 60.75
- **C** 22
- B 45.5
- **D** 91
- 4. What is the geometric mean of
  - -5 and  $-\frac{5}{16}$ ?
  - $\mathbf{F} \pm \frac{16}{25}$

- 5. Olaf plants a garden and harvests 20 tomatoes the first year. The garden produces 5% more tomatoes each year. How many tomatoes, total, does Olaf harvest during the first 10 years?
  - **A** 210
- **C** 251
- **B** 226
- **D** 283
- 6. What is the 12th term of the geometric sequence where  $a_7 = 7$  and  $a_{10} = -56$ ?
  - **F** -448
- H 112
- G 224
- **J** -96

- 7. Linda and Bradley plant a tree in their backyard. At the end of the first year, the tree is 6 feet tall. At the end of the second and third years, the tree is 9 and 10.5 feet tall. Assume the tree's height follows a geometric series. What is the maximum height of the tree?
  - **A** 12 ft
- C 24 ft
- **B** 18 ft
- **D** 30 ft
- 8. Which series below converges?
  - **F** 2 + 3 + 4.5 + ...
  - $\mathbf{G} 100 + 80 + 64 + \dots$
  - H 1 2 + 4 ...
  - J 8 + 12 + 18 + ...
- 9. Identify the counterexample which disproves the statement  $n^4 \le 4^n$ .
  - **A** n = -1
- **C** n = 0
- **B** n = 0.5
- **D** n = 1
- **10.** Paulo is making a stepped structure out of sugar cubes for a school project. The first three rows are shown below and he will follow this pattern to build higher rows. How many sugar cubes will he have used when the project is finished?



**F** 80

**H** 90

- **G** 88
- **J** 100
- 11. What is the approximate sum of the

geometric series  $\sum_{w=1}^{\infty} 12 \left(\frac{3}{5}\right)^w$ ?

- **A** 18
- **B** 20
- **D** 30
- 12. An infinite geometric series has a sum of 200 and a common ratio of  $\frac{4}{5}$ . Which is the first term of this series?
  - **F** 40
- **H** 100
- **G** 80
- **J** 160

## Answer Key continued

- **6.** J
- **7.** B
- **8.** H
- 9. A
- **10.** H
- **11.** D
- **12.** G

#### Section Quiz: Lessons 12-4 to 12-5

- **1.** C
- **2.** H
- **3.** B
- 4. F
- **5.** C
- **6.** G
- **7.** A
- **8.** G
- 9. A
- **10**. H
- **11.** A
- **12.** F

### **Chapter Test Form A**

- **1.** B
- **2.** B
- **3.** D
- **4.** D
- **5.** B
- **6.** D
- **7.** D
- 8. C
- **9.** B
- **10.** B
- **11.** A
- **12.** A

- **13.** B
- **14.** B
- **15.** A
- **16.** B
- **17.** B
- **18.** C
- **19**. A
- **20.** D
- **21.** C
- **22**. A
- **23.** C
- **24.** B

### **Chapter Test Form B**

- **1.** C
- **2.** H
- **3.** C
- **4.** J
- **5.** B
- **6.** J
- **7.** B
- **8.** F
- **9.** B
- **10.** H
- **11.** D
- **12.** H
- **13.** C
- **14.** G
- **15.** A
- **16.** H
- **17.** D
- **18.** G
- **19.** B
- **20**. G