

**CHAPTER** **12** **Quiz**  
**Lessons 12-1 to 12-3**

Select the best answer.

1. What are the first 4 terms of the sequence where  $a_1 = -2$  and  $a_n = 5 - 2a_{n-1}$ ?  
**A** -2, 9, -16, 23    **C** -2, 9, -13, 31  
**B** -2, 7, -9, 11    **D** -2, 7, -2, 7

2. A new play receives bad reviews on opening night and ticket sales start to decrease. Ticket sales for the first 5 nights form the sequence 400, 399, 396, 387, 360,...

Find an explicit rule for the number of tickets sold on the  $n$ th night.

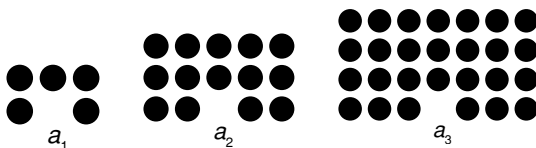
**F**  $a_n = a_{n-1} - 3^{(n-1)}$

**G**  $a_n = a_n - 3^{(n-1)}$

**H**  $a_n = a_n - 3^n$

**J**  $a_n = a_{n-1} - 3^n$

3. How many dots will appear in the next 2 figures of the dot pattern below?



- A** 36, 45    **C** 44, 65  
**B** 40, 53    **D** 65, 90

4. Kate's grandfather gives her an old coin worth \$50. The coin increases in value by 8% each year. How much is the coin worth after 17 years?

**F** \$118    **H** \$186

**G** \$185    **J** \$215

5. Which is summation notation for the series  $\frac{2}{4} + \frac{4}{6} + \frac{6}{8} + \frac{8}{10}$ ?

**A**  $\sum_{k=1}^4 \frac{2k}{2k+2}$

**C**  $\sum_{k=1}^4 \frac{3k-2}{2k+2}$

**B**  $\sum_{k=1}^4 \frac{k+1}{k+3}$

**D**  $\sum_{k=1}^4 \frac{2k}{k+3}$

6. A computer virus infects an e-mail account and sends itself to 4 new accounts. The next day, each of those accounts sends the virus to 4 other accounts, and so on. How many accounts are infected with the virus after five days?

**F** 256    **H** 1024

**G** 341    **J** 1365

7. Evaluate  $\sum_{k=4}^9 k^2$ .

**A** 190    **C** 285

**B** 271    **D** 371

8. Elena is knitting a design on a sweater. The first row has 20 stitches and each additional row has 6 stitches more than the row before it. How many stitches are in the 12th row?

**F** 74    **H** 86

**G** 80    **J** 92

9. What is the 38th term of the arithmetic sequence where  $a_4 = 8.5$  and  $a_7 = 13$ ?

**A** 59.5    **C** 64

**B** 61    **D** 65.5

10. Laurent's new job grants him 100 stock options each year. Every year, he is given 20 more than the year before. How many stock options will Laurent have after 8 years on the job?

**F** 960    **H** 1360

**G** 980    **J** 1520

11. Evaluate  $\sum_{k=1}^{11} (1 - 3k)$ .

**A** -396    **C** -198

**B** -374    **D** -187

12. Evaluate  $\sum_{k=3}^9 -9$ .

**F** -81    **H** -45

**G** -54    **J** -27

## Answer Key continued

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4. independent events
5.  $\frac{1}{2} \cdot \frac{1}{2} \cdot \frac{1}{2} = \frac{1}{8}$
6. rolling at least one CAR
7.  $1 - \frac{1}{8} = \frac{7}{8}$
- 8a.  $\frac{1}{2}$
- 8b.  $\frac{1}{2} \cdot \frac{1}{2} = \frac{1}{4}$
- 8c.  $\frac{1}{2} \cdot \frac{1}{2} \cdot \frac{1}{2} = \frac{1}{8}$
- 8d.  $\frac{1}{2} + \frac{1}{4} + \frac{1}{8} = \frac{7}{8}$
9. The probability of rolling one, two, or three CARs in three rolls is the same as rolling one CAR (and keeping it) in one, two, or three rolls.
10.  $\frac{16,807}{32,768} \approx 0.513$
11. the contestant; their chance of winning is greater than 50%, the chance of the game show owner winning (the contestant losing) is less than 50%

### Cumulative Test

1. A
2. H
3. C
4. J
5. B
6. H
7. B
8. F
9. C
10. J
11. D
12. H
13. D
14. G
15. B
16. H
17. A
18. G
19. A
20. J
21. A
22. H
23. D
24. H
25. B
26. G
27. D
28. H
29. C
30. J
31. C
32. H
33. C
34. J
35. B
36. G
37. A
38. H
39. D
40. H

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### CHAPTER 12

#### Section Quiz: Lessons 12-1 to 12-3

1. C
2. F
3. C
4. G
5. A

## Answer Key continued

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- 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