3 LESSON PRACTICE

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Answer Key

1. B DOK2
2. A DOK2
3. C DOK2
4. D DOK2
5. C DOK1
6. B DOK2
7. C DOK2
8. C DOK2
9. A, D, E DOK2
10.

Term	Value
a_1	14
a_4	−13
a_{10}	−67
a_{17}	−130

DOK2

11. Part A

$a_n = 18.50 + (n - 1)(1.75)$

Part B

\$27.25; $a_6 = 18.50 + (6 - 1)(1.75) = 18.50 + 5(1.75) = 27.25$

DOK2

12. 51; Sample answer:

$a_n = -40 + (n - 1)(13)$

$a_8 = -40 + (8 - 1)(13) = -40 + 7(13) = 51$

DOK2

13. Part A

$a_n = 11 + (n - 1)(3)$

Part B

35; Sample answer:

$a_9 = 11 + (9 - 1)(3) = 11 + 8(3) = 35$

DOK2

14. no; Sample answer:

If 214.4 is a term, then for some whole number value of n, $214.4 = 53.4 + (n - 1)(1.8)$. Solve this equation. If n is a whole number, then 214.4 is a term.

$214.4 = 53.4 + (n - 1)(1.8)$

$214.4 = 53.4 + 1.8n - 1.8$

$162.8 = 1.8n$

$n \approx 90.4$

Since n is not a whole number, 214.4 is not a term in the sequence.

DOK3

15. Part A

$p + q - 6$; Sample answer:

$(2p + q + 1) - (p + 7) = 2p + q + 1 - p - 7 = p + q - 6$

$(3p + 2q - 5) - (2p + q + 1) = 3p + 2q - 5 - 2p - q - 1 = p + q - 6$

$(4p + 3q - 11) - (3p + 2q - 5) = 4p + 3q - 11 - 3p - 2q + 5 = p + q - 6$

Part B

$a_n = p + 7 + (n - 1)(p + q - 6)$

Part C

$a_{12} = p + 7 + (12 - 1)(p + q - 6)$

$= p + 7 + 11p + 11q - 66$

$= 12p + 11q - 59$

Part D

Yes; Sample answer: Set the value of the first term equal to $p + 7$ and solve for p. In the example given, $p + 7 = 9$, so $p = 2$. Then, find the value of d in the sequence, and set that value equal to $p + q - 6$, substitute the value of p found in the first step, and solve for q. In the example given, $p + q - 6 = 2 + q - 6 = 10$, so $q - 4 = 10$, and $q = 14$.

DOK3

UNIT 2