**Arithmetic Sequences Worksheet** **Name _____**
**Algebra** **Date _____**

Find the common difference for each arithmetic sequence.

1. 12, 16, 20, …

2. 3, 1, -1, …

3. 6.7, 6.3, 5.9, …

4. 1.3, 3.8, 6.3, …

Find the common difference and the next three numbers in each arithmetic sequence.

5. 9, 16, 23, …

6. -67, -60, -53, …

7. 15, 7, -1, …

8. $\frac{18}{5}, \frac{16}{5}, \frac{14}{5}, \ldots$

Using $a_n = a_1 + d(n-1)$, write an equation for the $n^{th}$ term of each arithmetic sequence.

9. 4, 7, 10, 13, …

10. 7, 16, 25, 34, …

11. 18, 11, 4, -3, …

12. -3, -5, -7, -9, …

13. -110, -85, -60, -35, …

14. 6.2, 8.1, 10.0, 11.9, …

Given the equation for the $n^{th}$ term, find the first three numbers of the arithmetic sequence.

15. $a_n = 8n - 13$

16. $a_n = -3n - 5$

Using $a_n = a_1 + d(n-1)$, find the indicated term of each arithmetic sequence.

17. $a_1 = 3$, $d = 7$, $n = 14$

18. $a_1 = -4$, $d = -9$, $n = 20$

19. $a_1 = 5$, $d = \frac{1}{3}$, $n = 12$

20. $a_{21}$ for 121, 118, 115, …

21. $a_{12}$ for 8, 3, -2, …

22. $a_{43}$ for 5, 9, 13, 17, …

23. To prove that objects of different weights fall at the same rate, Galileo dropped two objects with different weights from the Leaning Tower of Pisa in Italy. The objects hit the ground at the same time. When an object is dropped from a tall building, it falls about 16 feet in the first second, 48 feet in the second second, and 80 feet in the third second, regardless of weight. How many feet would an object fall in the tenth second?

24. Trevor Koba had opened an English Language School in Isehara, Japan. He began with 26 students. If he enrolls 3 new students each week, in how many weeks will he have 101 students?