CP Algebra 2 **Name: _____**

Arithmetic Sequences and Series Worksheet Date: _____ Block: _____

Name the first five terms of each arithmetic sequence described.

1. $a_1 = 4,\ d = 3$ 1. _____

2. $a_1 = 7,\ d = 5$ 2. _____

3. $a_1 = 16,\ d = -2$ 3. _____

4. $a_1 = 38,\ d = -4$ 4. _____

Name the next four terms of each arithmetic sequence.

5. 5, 9, 13, … 5. _____

6. 2, -3, -8, … 6. _____

7. $\frac{1}{2}, \frac{3}{2}, \frac{5}{2}, \ldots$ 7. _____

Find the n^{th} term of each arithmetic sequence.

8. $a_1 = -1,\ d = -10,\ n = 25$ 8. _____

9. $a_1 = -3,\ d = -9,\ n = 11$ 9. _____

10. $a_1 = 2,\ d = ½,\ n = 8$ 10. _____

Complete each statement.

11. 124 is the _____th term of –2, 5, 12, … 11. _____

12. –28 is the _____th term of 7, 2, -3, … 12. _____

Find the indicated term in each arithmetic sequence.

13. a_{12} for –17, -13, -9, … 13. _____

14. a_{21} for 10, 7, 4, … 14. _____

15. a_{10} for 8, 3, -2, … 15. _____

Find the missing terms in each arithmetic sequence.

16. 55, ____, ____, ____, 115 16. _____

17. -10, ____, ____, ____, 2 17. _____

18. The last term of an arithmetic sequence is 207, the common difference is 3, and the number of terms is 14. What is the first term? 18. _____

19. During a free fall, a skydiver falls 16 feet in the first second, 48 feet in the 2^{nd} second, and 80 feet in the third second. If she continues to fall at this rate, how many feet will she fall during the 8^{th} second? 19. _____

Find S_n for each series described. Evaluate for the given series.

20. 13, 15, 17, 19, 21, 23 20. _____

21. 6, 11, 16, 21, 26, 31, 36 21. _____

22. 39, 49, 59, 69 22. _____

23. $a_1 = 2, a_n = 122, n = 13$ 23. _____

24. $a_1 = -18, a_n = -102, n = 13$ 24. _____

25. $160 + 80 + 40 + \ldots , n=6$ 25. _____

26. $7 + 9 + 11 + 13\ldots, n = 10$ 26. _____

27. $a_1=5, d = 9, n=7$ 27. _____

28. $a_1=13, d=-6, n=21$ 28. _____

Determine the number of terms *n* in each arithmetic series.

29. $a_1 = 19, a_n = 96, S_n = 690$ 29. _____

30. $a_1 = 15, a_n = 79, S_n = 423$ 30. _____

31. $a_1 = -3, d = 2, S_n = 21$ 31. _____

32. $a_1 = 4, d = 7, S_n = 228$ 32. _____