

HW25: (2.3) Arithmetic Sequences Homework

Write the first six terms of each arithmetic sequence.

1. $a_1 = -8, d = 5$

2. $a_1 = \frac{5}{2}, d = -\frac{1}{2}$

Find the indicated term of the arithmetic sequence with first term, a_1 , and common difference, d .

3. Find a_{60} , when $a_1 = 8, d = 6$.

4. Find a_{70} , when $a_1 = -32, d = 4$.

Write a formula for the general term (the n th term) of each arithmetic sequence. Do not use a recursion formula. Then use the formula for a_n to find a_{20} , the 20th term of the sequence.

5. $a_1 = -70, d = -5$

6. $a_1 = -15, d = 7$

Write a formula for the general term (the n th term) of each arithmetic sequence.

7. $a_8 = -5, a_{18} = 55$

8. $a_9 = 21, a_{22} = -5$

Write a formula for the general term (the n th term) of each arithmetic sequence.

9. 7, 3, -1, -5,

10. 2, 7, 12, 17,

Find the sum of the first 41 terms.

11. -11, -6, -1, 4,...

12. $a_1 = 20$, $a_8 = -8$

Find the sum.

13. $\sum_{i=1}^{25} -3i - 2$

14. $\sum_{i=10}^{38} -i + 10$

15. $\sum_{i=1}^{34} 8i + 1$

16. $\sum_{i=8}^{45} -3i + 22$

17. Seats in a theater expand out from the first row of 12 seats to a second row of 16, to a third row of 20 and so on.
- Write a formula for the general term (the n th term) of each arithmetic sequence.
 - How many seats are in the eighth row?
 - How many seats are in the theater if there are 10 rows?

Answers

- $-8, -3, 2, 7, 12, 19$
- $\frac{5}{2}, 2, \frac{3}{2}, 1, \frac{1}{2}, 0$
- 362
- 244
- $a_n = -5n - 65, a_{20} = -165$
- $a_n = 7n - 22, a_{20} = 118$
- $a_n = 6n - 53$
- $a_n = -2n + 39$
- $a_n = -4n + 11$
- $a_n = 5n - 3$
- 3649
- 2460
- 1025
- 406
- 4794
- 2185
- $a_n = 4n + 8$
 - 40 seats
 - 300 seats