

Precalculus 10.2 Homework

Name _____ period _____ date _____ score _____

Show algebraically that each sequence is arithmetic and find the common difference.

1. $\{a_n\} = \{3n + 5\}$

2. $\{a_n\} = \{6 - 2n\}$

3. $\{a_n\} = \{e^{\ln n}\}$

Find the n th term and 51st term of the arithmetic sequence with the given first term and common difference.

4. $a_1 = -2, d = 4$

5. $a_1 = 5, d = -3$

6. $a_1 = 20, d = -\frac{1}{4}$

Find the indicated term in each arithmetic sequence.

7. 80th term of $-7, -4, -1, \dots$

8. 72nd term of $4, -2, -8, \dots$

9. 35th term of $4\sqrt{5}, 6\sqrt{5}, 8\sqrt{5}, \dots$

- a) Find the first term and the common difference.
b) Give a recursive formula for the sequence.
c) Find a formula for the n th term.

10. 8th term is 8; 20th term is 44

11. 9th term is -5 ; 15th term is 25

12. 7th term is 4; 17th term is -96

13. 12th term is -4 ; 18th term is -28

Find each sum.

14. $1+3+5+\dots+(2n-1)$

15. $5+8+11+\dots+44$

16. $6+2-2-6-\dots-70$

17. $\sum_{k=1}^{80} (3k-4)$

18. $\sum_{k=1}^{35} (5-3k)$

19. $\sum_{k=1}^{60} \left(\frac{k}{4} + \frac{1}{2} \right)$

