

MAT 150 – Homework 23
Sections 7.1 and 7.2

NAME _____

Directions: Show all work and write your final answer in the space provided.

1. Find the first five terms of the sequence $a_n = \frac{2n+1}{2n}$. 1. _____
2. Find the 6th term of the arithmetic sequence if $a_1 = -2$ and $d = 4$. 2. _____
3. Find the first five terms of the recursively defined sequence $a_n = 4 - a_{n-1}$, if $a_1 = 3$. 3. _____
4. Find a formula for the n th term of the arithmetic sequence if the 8th term is 4 and the 18th term is -96 . 4. _____
5. Find the first five terms of the sequence $a_n = (-1)^{n-1} \left(\frac{n}{2n-1} \right)$. 5. _____
6. Find the 8th term of the arithmetic sequence $-1, 1, 3, \dots$ 6. _____
7. Find the 5th term of the arithmetic sequence if $a_1 = 1$ and $d = -\frac{1}{3}$. 7. _____
8. Find the sum of the sequence $-3 + 1 + 5 + \dots + 65$. 8. _____
9. Find a formula for the n th term of the arithmetic sequence if the 4th term is 3 and the 20th term is 35. 9. _____
10. Express the sum $1^3 + 2^3 + 3^3 + \dots + 8^3$ using sigma notation. 10. _____
11. Find the sum of the sequence $3 + 5 + 7 + \dots + 51$. 11. _____
12. Find the sum of $\sum_{k=0}^4 -2k + 7$. 12. _____

13. Find the sum of the first 25 terms of the arithmetic sequence $-3n + 17$. 13. _____

14. Express the sum $\frac{1}{e} + \frac{2}{e^2} + \frac{3}{e^3} + \dots + \frac{n}{e^n}$ using sigma notation. 14. _____

15. Find the sum of $\sum_{k=1}^6 3k - 5$. 15. _____

16. Find the sum of the first 40 terms of the arithmetic sequence $4n - 55$. 16. _____

17. Find the sum of $\sum_{k=2}^5 2k^2 - 4k + 3$. 17. _____

18. Find the sum of $\sum_{k=0}^3 k^3 - 3$. 18. _____

19. Find the 17th term of the arithmetic sequence if 5th term is -7 and the 13th term is 25. 19. _____

20. A theater has 25 seats in the first row and 35 rows in all. Each successive row contains one additional seat. How many seats are in the theater? 20. _____