Chapter 11 Review B.
Assignment # _____ You must do your work on a separate piece of paper for credit.

1. Write a recursive and explicit rule for the sequence: 4, 8, 13, 19, 26

2. $\sum_{n=1}^{\infty} 3\left(\frac{3}{4}\right)^{n-1}$

3. $\sum_{n=5}^{10} 3\left(\frac{3}{4}\right)^{n-1}$

4. $\sum_{n=1}^{10} n(2n-1)+5$

5. Write the explicit rule for the sequence: $\frac{1}{4}, -\frac{2}{5}, \frac{1}{2}, -\frac{4}{7}, \frac{5}{8}, \ldots$

6. Graph: $a_n = 10\left(\frac{1}{2}\right)^{n-1}$

7. Write the explicit rule for the geometric sequence if $a_2 = -20; a_4 = -5$

8. Find n if $\sum_{k=1}^{n} 6(2)^{k-1} = 6138$

9. Find n if 3 + 8 + 13 + 18 + 23 + …. = 366

10. Write in summation notation: 50 + 42 + 34 + 26 + 18

11. Write the repeating decimal as a fraction: 4. 0345454545….

12. A ball is dropped from a height of 10 ft. Each time it hits the ground, it bounces to 80% of its previous height. Find the total distance traveled by the ball. On which bounce will the ball have traveled 85% of its distance?

13. Write the explicit rule for 2, -4, 6, -8, 10, -12, ...
Find the 20th term.

14. Write the explicit rule for -1, 4, -9, 16, -25, 36, -49, ...

15. Write the explicit rule for -1, 4, -16, 64, …

16. Write the explicit rule for an arithmetic sequence: $a_4 = -11$; $a_7 = -20$

17. Find the sum of the series: 200 -100+ 50 -25+ .....
b. Find the sum of the first 7 terms of the series (calculator practice before the test)
c. Find the sum of the first 6 terms of the series (calculator practice before the test)

18. $\sum_{n=1}^{10} 2n-1 = \sum_{n=15}^{24} ?$

19. Find the explicit rule for the sequence: $1, \frac{-1}{2}, \frac{1}{4}, \frac{-1}{8}, \ldots.$

20. Find the explicit rule for the sequence: $1, \frac{-1}{2}, \frac{1}{3}, \frac{-1}{4}, \ldots.$

21. -4, -2, 0, 2, … If the nth term is 188. Find n.

22. 100, 50, 25, 12.5, … If the nth term is $\frac{25}{2048}$, find n.

Answers:

1. Recursive: $a_n = a_{n-1} + n + 2$; Explicit; $a_n = 0.5\ n^2 + 2.5\ n + 1$

2. 12

3. 3.12

4. 765

5. $a_n = (-1)^{n+1} \cdot \frac{n}{n+3}$

6. **POINTS** (1,10); (2,5); (3, 2.5); (4, 1.25); (5, 0.625); (6, 0.3125); …

7. $a_n = -40\left(\frac{1}{2}\right)^{n-1}; a_n = 40\left(-\frac{1}{2}\right)^{n-1}$

8. 10

9. 12

10. $\sum_{n=1}^{5} 58 - 8n$

11. 4 19/550

12. 90 ft; 8 up/dn bounces plus 1 first down bounce: total 9 bounces

13. $a_n = (-1)^{n+1}\ (2n)$

13b. -40

14. $a_n = (-1)^n\ n^2$

15. $a_n = -1(-4)^{n-1}$

16. $a_n = -3n + 1$

17. 400/3; 1075/8; 525/4

18. $\sum_{n=15}^{29} 2n - 29$

19. $a_n = 1\left(\frac{-1}{2}\right)^{n-1}$

20. $a_n = (-1)^{n+1}\left(\frac{1}{n}\right)$

21. 97

22. 14