Math 2312 **Homework** *Sec*–2.2 ***Name***:

(**1 – 3**) Find the common difference for the arithmetic sequence with the specified terms:

1. a_7; $a_{15} = 0$, $a_{40} = -50$

2. a_n; $a_{14} = -1$, $a_{15} = 31$

3. a_{12}; $a_8 = 8$, $a_{20} = 44$

4. Find arithmetic sum: $3 + 5 + 7 + \cdots + 65$

(**5 – 6**) Find the specified term of the geometric sequence that that has 2 given terms

5. a_{10}; $a_2 = 3$, $a_4 = 6$

6. a_{12}; $a_1 = -4$, $a_3 = -1$

(**7 – 10**) Find the sum

7. $\displaystyle\sum_{k=0}^{9} \left(-\frac{1}{2}\right)^{k+1}$

8. $\displaystyle\sum_{n=1}^{\infty} \left(\frac{5}{2}\right)^{n}$

9. $\displaystyle\sum_{n=1}^{\infty} \left(\frac{2}{5}\right)^{n}$

10. $\displaystyle\sum_{k=8}^{14} \left(3^{k-7} + 2j^2\right)$

11. Find the rational number represented by the repeating decimal $3.2\overline{394}$