MAC 2312 Calculus II, Worksheet #9

Date: _____ Name:_____

For the following sequences,

1. Find the general a_n, if it is not given in that form
2. Graph them in a two dimensional plane as (n, a_n)
3. Determine whether it is increasing or decreasing
4. Determine if it is bounded or not
5. Determine if it is convergent or not

Q1) $\{5, 8, 11, 14, 17 \dots\}$

Q2) $\left\{-3, 2, -\frac{4}{3}, \frac{8}{9}, -\frac{16}{27} \dots\right\}$

Q3) $\left\{\frac{1}{2}, -\frac{4}{3}, \frac{9}{4}, -\frac{16}{5}, \frac{25}{6} \dots\right\}$

Q4) $\left\{e^{\frac{1}{n}}\right\}$

Q5) $\left\{\frac{(2n-1)!}{(2n+1)!}\right\}$

Q6) $\left\{\left[1+\frac{1}{n}\right]^n\right\}$

Q7) $\left\{n \sin(1/n)\right\}$

Q8) $\left\{\frac{n!}{2^n}\right\}$