HONORS PRECALCULUS
SEQUENCES & SERIES

NAME:_____
DATE:_____

1. a) Identify if the sequence is arithmetic or geometric.
b) Find the explicit formula for the *nth* term.
c) Find the 20^{th} term of the sequence.
d) Find the sum of the first 10 terms of the sequence.

$-18, -5, 8, 21, \ldots$

2. The second and 5^{th} terms of a geometric sequence are 27 and 125 respectively. Find the explicit rule for the sequence and the 9^{th} term.

3. Find the fourth term of: $(x+3)^9$

4. Find: $\frac{(n+2)!}{n!}$

5. Determine if the series converges or diverges. If the series converges, find the sum.

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