1. \[
\sum_{k=0}^{\infty} a_k \ 	ext{converges to 4 means (finish the sentence)}
\]

2. \[
\sum_{n=1}^{\infty} \left(0.3 + \frac{3}{n^2}\right). \text{ Using the vocabulary and notation from class:}
\]
   (2) (a) \(a_4 = \) ________  \hspace{1cm} (b) \(s_2 = \) __________

3. A ball is thrown 30 feet straight up into the air, and on each bounce, it rebounds to 40% of its previous height.
   (2) (a) Use a sum to represent the total distance traveled by the ball. \[
\sum_{k=0}^{\infty} \]
   (2) (b) What was the total distance traveled by the ball? ________

4. True or False (circle one for each statement)
   (1) True False If \(\lim_{n \to \infty} s_n = 5\), then \(\sum_{k=0}^{\infty} a_k\) converges.
   (1) True False If \(\lim_{k \to \infty} c_k = 0\), then \(\sum_{k=0}^{\infty} c_k\) converges.
   (1) True False If \(\sum_{k=0}^{\infty} c_k\) converges, then \(\lim_{k \to \infty} c_k = 0\).

5. Does each series Converge or Diverge? (Circle one for each series. If the series converges, find the sum.)
   (2) \(\left(\frac{1}{e}\right)^2 + \left(\frac{1}{e}\right)^3 + \left(\frac{1}{e}\right)^4 + \left(\frac{1}{e}\right)^5 + \ldots\) Diverges Converges to ______
   (2) \(\frac{3}{4} + \frac{3}{5} + \frac{3}{6} + \frac{3}{7} + \frac{3}{8} + \ldots\) Diverges Converges to ______
   (2) \(\sum_{k=5}^{\infty} \left(\frac{3}{k} \pm \frac{3}{k+1}\right)\) Diverges Converges to ______

6. Name one area/field in which John von Neumann worked. ________________