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| **Problem 1 – Infinite Series** | | |
| **1.** Find the next three terms of each infinite series. | | |
| **a.** … | **b.** … | **c.** … |
| **Hint:** Divide each of the terms by the first term. What do you notice?  **2.** Write an expression in terms of *n* that describes each of the above series  using sigma notation. | | |
| **Problem 2 – Finding the Sum of a Geometric Series** | | |
| Find the partial sum of these geometric series. To find the sum of a series, press ƒ \_ Á for summation. Use the arrow keys to maneuver. Notice that you need to type another set of parentheses within the parentheses that are supplied. To show the decimal, press » Á Í.  **3a.**  **3b.**  **4.** | |  |

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| **Problem 3 – Convergence and Divergence of Geometric Series** | |
| Use Lists to display the terms of each series.  Press … Í to access the table of data screen.  In **L1**, enter **seq(x,x,1,50)** in the top most cell. The **seq(** command can be found by pressing y …[list] and arrowing over to **OPS** and selecting **5:seq(**. Enter the information in the **seq** exactly as shown in the screen to the right.  In the top most cell of **L2**, type and Í. |  |
| Next we will graph the series.  First we will need to generate a list with the cumulative sums of the terms of the sequence. To do this, move to the top most cell of **L3**, press Í, then press y … [list] and arrow over to **OPS** and select **6:cumSum(**. Then type y Á e and press Í.  This will list the first 50 partial sums of the series in **L3**.  Repeat these steps for Problems 5, 6, and 7 below. |  |
| You can view a graph for each series by creating a scatter plot of the values of the partial sums of the series.  To create a scatter plot, select y o [stat plot] À.  Set up as shown in the figure to the right.  To view the graph, press q **9:ZoomStat**.  To get an even better view of the behavior of the partial sums, you can change the scaling of the *x* and *y*-axes. Press p and change each of the following: **Xscl:** 2 **Yscl:** 0.2**.**  The graph should look like the screen shown to the right. |  |
| Determine the convergence or divergence of each of the following series. Create a scatter plot of the values or the partial sums to aid in determining the behavior of each series.  **5.**  **6.**  **7.** | |