1. The probability density function for a player scoring $x$ points on a video game is
   
   $p(x) = 0.001 e^{-0.001x}$.

   What is the probability of scoring 3000 points or higher?
2. Find the sum of the series

\[ 100 + 20 + 4 + 0.8 + 0.16 + \ldots \]
3. What is the third order Taylor polynomial for the function $f(x) = x^{20}$ at $x = 1$?
4. (a) Find a function $y = f(x)$ whose graph is given by the “sine wave” pictured below.

(b) Find a function $z = f(x, y)$ whose graph is given by the “sine wave” surface shown below.
5. The five contour line diagrams shown below are the graphs of five of the following nine functions $f(x, y)$:

\[
\begin{align*}
&x^2, \quad y^2, \quad x + y, \quad x - y, \quad x^2 + y^2, \quad x^2 - y^2, \quad y^2 - x^2, \quad xy, \quad -xy
\end{align*}
\]

For each contour, choose the appropriate function.