SHOW ALL YOUR WORK

1. (1.5 points) What is the output of the following MATLAB statements?

\[
x = 1:3;
y = 3:-1:1;
z = \text{sum}(x.*y - \text{min}(x)*\text{max}(y))
\]

\[
\begin{align*}
x &= [1 2 3] \\
y &= [3 2 1] \\
x.*y &= [3 4 3] \\
\text{min}(x) &= 1 = \text{min}([1 2 3]) \\
\text{max}(y) &= 3 = \text{max}([3 2 1]) \\
z &= x.*y - \text{min}(x) \cdot \text{max}(y) = [3 4 3] - 3 = [0 0 0] \\
\text{sum}(0 0 0) &= 0
\end{align*}
\]

2. (1.5 points) What is the output of the following MATLAB statements?

\[
x = 32; \text{for } i = 1:4, x = x/2; \text{end}; y = x
\]

\[
\begin{align*}
x &= 32 \\
i &= 1, x = \frac{32}{2} = 16 \\
i &= 2, x = \frac{16}{2} = 8 \\
i &= 3, x = \frac{8}{2} = 4 \\
i &= 4, x = \frac{4}{2} = 2 \\
y &= x = 2
\end{align*}
\]

3. (2 points) Write down a series of MATLAB commands that you would use to find the average value of the first 100 non-zero integers.

\[
\text{Sum of first } N \text{ integers} = \frac{N(N+1)}{2}
\]

\[
\text{Average} = \frac{\text{Sum}}{N}
\]

\[
z = (100+1)/2;
\]

\[
\text{or}
\]

\[
z = \text{sum}([1:100])/100
\]