Matlab basics:

1. True or False: If $A$ and $B$ are both $3 \times 3$ square matrices, then the MATLAB command $A * B$ and $A .* B$ would give the same result.

2. Fill in the blank: If we run the command:
   
   ```matlab
   sum = 0;
   for k = 1:5
       sum = sum * 2 + k;
   end
   disp(sum)
   ```

   What will be displayed?

3. In MATLAB, let $x = \text{linspace}(0, \pi, 100)$ and $y_1 = \sin(x)$, $y_2 = \cos(x)$. What would be the correct command to plot $y_1$ and $y_2$ together in Matlab?
   a. `plot(y1, y2)`
   b. `plot(y2, y1)`
   c. `plot(x, y1, y2)`
   d. `plot(x, y1, x, y2)`

Encoding basics:

1. True or false: The spike count for a Poisson model neuron has zero variance.

2. Say

   ```matlab
   sample_list = [0 0 3]
   ```

   is a list of samples of a random variable. What is the sample mean?

3. Say

   ```matlab
   sample_list = [1 1 1]
   ```
is a list of samples of a random variable. What is the sample variance?

4. True or false: Tuning curve analysis is only applied to responses of neurons to sensory inputs, never to motor outputs.