1. (True/False) In some applications, NMF can make for more human interpretable latent features.

   1 / 1 point

   ⦿ True

   ◯ False

   > ✓ **Correct**
   > Correct! You can find more information in the video Non Negative Matrix Factorization.

2. Which of the following set of features is the least adapted to NMF?

   1 / 1 point

   ◯ Word Count of the different words present in a text.

   ◯ Pixel color values of a an Image.

   ◯ Spectral decomposition of an audio file.

   ⦿ Monthly returns of a set of stock portfolios.

   > ✓ **Correct**
   > Correct! You can find more information in the video Non Negative Matrix Factorization.

3. (True/False) The NMF can produce different outputs depending on its initialization.

   1 / 1 point

   ⦿ True

   ◯ False

   > ✓ **Correct**
   > Correct! Please review the video Non Negative Matrix Factorization.

4. Which option is the sparse representation of the matrix below?

   1 / 1 point

   [(1, 1, 2), (1, 2, 3), (3, 4, 1), (2, 4, 4), (4, 3, 1)]

   ⦿ [[2 0 0 0],

   [0 3 0 0],

   [0 0 0 1],

   [0 4 1 0]]

   ◯ [[0 0 0 1],

   [0 2 0 0],

   [0 0 0 3],

   [0 4 1 0]]

   ◯ [[1 0 0 0],

   [0 3 0 0],

   [0 2 0 0],

   [0 0 4 2]]

   ◯ [[0 0 0 2],

   [0 3 4 0],

   [0 0 0 0],

   [0 0 1 0]]

   > ✓ **Correct**
   > Correct! You can find more information in the video Non Negative Matrix Factorization Notebook - Part 1.

5. In *Practice lab: Non-Negative Matrix Factorization*, why did we use "pairwise_distances" from scikit-learn?   1 / 1 point

○ To calculate the maximum pairwise distance between points in the dataset.

● To calculate the pairwise distance between NMF encoded version of the original dataset and the encoded query dataset.

○ To calculate the pairwise distance between points of the NMF encoded version of the original dataset.

○ To calculate the pairwise distance between data points for eliminating outliers.

✓ **Correct**
Correct! This helps us determine which existing data point is most similar (and hence the closest) to a new query point.