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 pairwise distance between points of the NMF encoded version of the original dataset.
○ To calculate the pairwise distance between data points for eliminating outliers.
○ 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.

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