

**Your grade: 100%**Your latest: **100%** • Your highest: **100%** • To pass you need at least 80%. We keep your highest score.[Next item →](#)

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 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 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 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 data points for eliminating outliers.  
☒ To calculate the pairwise distance between NMF encoded version of the original dataset and the encoded query dataset.  
☐ To calculate the maximum pairwise distance between points in the dataset.  
☐ To calculate the pairwise distance between points of the NMF encoded version of the original dataset.

**Correct**

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