**Рекомендованные материалы для выполнения практического задания по теме «Итоговая работа».**

Список функций и материалов, которые могут пригодиться:

Задание 1

* Часть a
  + [sklearn.metrics.pairwise\_distances](https://scikit-learn.org/stable/modules/generated/sklearn.metrics.pairwise_distances.html)
* [numpy.dot](https://pyprog.pro/linear_algebra_functions/dot.html)
* [numpy.linalg.norm](https://pyprog.pro/linear_algebra_functions/linalg_norm.html)
* Часть b
* [sklearn.decomposition.PCA](https://scikit-learn.org/stable/modules/generated/sklearn.decomposition.PCA.html)
* [sklearn.decomposition.TruncatedSVD](https://scikit-learn.org/stable/modules/generated/sklearn.decomposition.TruncatedSVD.html)

Задание 2

* [scipy.misc.derivative](https://docs.scipy.org/doc/scipy-0.15.1/reference/generated/scipy.misc.derivative.html)
* [sympy.symbols](https://www.geeksforgeeks.org/python-sympy-symbols-method/)
* [sympy.diff](https://www.geeksforgeeks.org/python-sympy-diff-method/)
* [sympy.evalf](http://espressocode.top/python-sympy-evalf-method/)

Задание 3

* [scipy.optimize.minimize](https://docs.scipy.org/doc/scipy/reference/generated/scipy.optimize.minimize.html) (+ [method=’COBYLA’](https://docs.scipy.org/doc/scipy/reference/optimize.minimize-cobyla.html#optimize-minimize-cobyla))
* [scipy.optimize.differential\_evolution](https://docs.scipy.org/doc/scipy/reference/generated/scipy.optimize.differential_evolution.html) (+ [scipy.optimize.Bounds](https://docs.scipy.org/doc/scipy/reference/generated/scipy.optimize.Bounds.html#scipy.optimize.Bounds))

Задание 4

* [numpy.random.randint](https://pyprog.pro/random_sampling_functions/randint.html)
* [numpy.random.choice](https://pyprog.pro/random_sampling_functions/choice.html)
* [numpy.mean](https://pyprog.pro/statistics_functions/mean.html)
* [matplotlib.pyplot.hist](https://matplotlib.org/3.2.0/api/_as_gen/matplotlib.pyplot.hist.html)

Задание 5

* [numpy.linalg.eig](https://pyprog.pro/linear_algebra_functions/linalg_eig.html) (\*)

Успехов! 😉