

MTH 337, Sample Quiz 5

You will have **15 minutes** to take the actual quiz.

1. Describe in words what the command `np.transpose(A, (1,0,2))` does.

2. Use the array

$$A = \begin{bmatrix} 1 & 2 \\ 3 & 4 \\ 5 & 6 \end{bmatrix}$$

to build the array

$$B = \left[\begin{array}{cc|cc|c} 1 & 2 & 1 & 2 & 1 \\ 3 & 4 & 3 & 4 & 3 \\ 5 & 6 & 5 & 6 & 5 \\ \hline 1 & 2 & 1 & 2 & 1 \\ 3 & 4 & 3 & 4 & 3 \end{array} \right].$$

3. Write a function that takes an integer k as input and uses broadcasting to create a $k \times k$ array where each column alternates between 0s and 1s.