Module 3.0b

We saw last time in class that map, zip, and reduce have a nice forms when applying the tensor chain rule. However, you might wonder how you might implement other tensor-to-tensor functions in PyTorch. Let's look at one of these.

The function $roll$ moves every element of a tensor around in a circle.

$$G([x_1, x_2, \ldots, x_N]) = [x_N, x_1, x_2, \ldots, x_{\{N-1\}}]$$

Recall also that we defined $G'^{j}_{x_i}$ as the derivative of the j'th output with respect to the i'th input.

1 1 point

What is $\text{roll}'^{1}_{x_1}([x_1, x_2, x_3])$?

Type your answer...

2 1 point

If x = [1,2,3], what is x.grad[1] after the following code?

```
y = 2 * x.roll()
y.backward()
```

Type your answer...