TENSOR MATH OPERATIONS

- Add, Substract, Multiply, Divide, Remainders, Exponents
- Shorthand and Longhand expressions
- Reassingnment

```
1 import torch
2 import numpy as np
```

```
1   tensor_a = torch.tensor([1,2,3,4])
2   tensor_b = torch.tensor([5,6,7,8])
```

```
1 # Addition
2 tensor_a + tensor_b
```

```
tensor([ 6,  8, 10, 12])
```

```
1 # Addition Longhand
2 torch.add(tensor_a, tensor_b)
```

```
tensor([ 6,  8, 10, 12])
```

```
1 # Another way to add Longhand
2 tensor_a.add(tensor_b)
```

```
tensor([ 6,  8, 10, 12])
```

```
1 # Substraction
2 tensor_b - tensor_a
```

```
tensor([4, 4, 4, 4])
```

```
1 # Substraction Longhand
2 torch.sub(tensor_b, tensor_a)
3
```

```
tensor([4, 4, 4, 4])
```

```
1 # Alias to sub
2 torch.subtract(tensor_b, tensor_a)
```

```
tensor([4, 4, 4, 4])
```

```
# Multplication
tensor_a * tensor_b
```

```
tensor([ 5, 12, 21, 32])
```

```
# Multplication Longhand
torch.mul(tensor_a, tensor_b)
```

```
tensor([ 5, 12, 21, 32])
```

```
# Multiplication Longhand
torch.multiply(tensor_a, tensor_b)
```

```
tensor([ 5, 12, 21, 32])
```

```
# Division
tensor_a / tensor_b
```

```
tensor([0.2000, 0.3333, 0.4286, 0.5000])
```

```
# Division Longhand
torch.divide(tensor_a, tensor_b)
```

```
tensor([0.2000, 0.3333, 0.4286, 0.5000])
```

```
torch.div(tensor_a, tensor_b)
```

```
tensor([0.2000, 0.3333, 0.4286, 0.5000])
```

```
# Remainder (Modulus)
tensor_b % tensor_a
```

```
tensor([0, 0, 1, 0])
```

```
# Remainder (Modulus) Longhand
torch.remainder(tensor_b, tensor_a)
```

```
tensor([0, 0, 1, 0])
```

```
# Exponent / power
tensor_a ** tensor_b
```

```
tensor([    1,    64,  2187, 65536])
```

```
# Exponent / power Longhand
torch.pow(tensor_a, tensor_b)
```

```
tensor([    1,    64,  2187, 65536])
```

```
# Reassignment
tensor_a = torch.tensor([1,2,3,4])
tensor_b = torch.tensor([5,6,7,8])
tensor_a = tensor_a +  tensor_b
tensor_a
```

```
tensor([ 6,  8, 10, 12])
```

```
# Reassignment with method add_
tensor_a = torch.tensor([1,2,3,4])
tensor_b = torch.tensor([5,6,7,8])
tensor_a.add_(tensor_b)
tensor_a
```

```
tensor([ 6,  8, 10, 12])
```