Mean of datasets

TOTAL POINTS 6

1.Question 1

What is the mean of the dataset $D = \{1, 2, 3\}$?

Do the exercises using pen and paper.

1 / 1 point

- 3
- 6
- 2

2.Question 2

Compute the mean of the following dataset:

$D=\{[1\ 4\ 7], [2\ 5\ 8], [3\ 6\ 9]\}$

Do the exercises using pen and paper.

1 / 1 point

- $[-2\ -5\ -8]$
- $[2\ 5\ 8]$
- $[6\ 15\ 24]$

3.Question 3

What is the mean of the following dataset, after multiplying each sample in the dataset by 2?

$D=\{[1\ 2\ 3], [3\ 4\ 5], [5\ 3\ 1]\}$

1 / 1 point

- $[18\ 18\ 18]$
- $[3\ 3\ 3]$
- $[6\ 6\ 6]$

4.Question 4

What is the mean of the following dataset, after adding $[1\ 2\ 3]$ to each sample in the following dataset?

$D=\{[1\ 2\ 3], [3\ 4\ 5], [5\ 3\ 1]\}$

1 / 1 point

- $[3\ 3\ 3]$

- [4 5 6]
- [2 1 0]

5.Question 5

Assuming that we know the mean $\bar{x}_{n-1}$ of a dataset D_{n-1} with n-1 data points. Now, suppose that we collect another data point, which we denote by x_*. Select the correct formula that computes the correct new mean \bar $\bar{x}_n$ of the full data set $D_n = D_{n-1} \cup \{x_*\}$, i.e., we add x_* to the dataset D.

1 / 1 point

- $\bar{x}_n = \bar{x}_{n-1} + \frac{1}{n-1}(x_* - \bar{x}_{n-1})$
- $\bar{x}_n = \bar{x}_{n-1} + 1/n * (x_* - \bar{x}_{n-1})$
- $\bar{x}_n = \bar{x}_{n-1} + \frac{1}{n+1}(x_* - \bar{x}_{n-1})$
- $\bar{x}_n = \bar{x}_{n-1} + \frac{1}{n+1}(\bar{x}_{n-1} - x_*)$

6.Question 6

Assuming you are given an image as a two dimensional array of shape 28 x 28. Write a small piece of python code to reshape this image to a vector of length 784 (=28 x 28).

Hint: This can be a one-liner.

1 / 1 point

```
import numpy as np
def reshape(x):
  """return x_reshaped as a flattened vector of the multi-dimensional array x"""
  x_reshaped = x.reshape(-1, 1)
  return x_reshaped
```

RunReset

```
No Output
```