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#### **Projections Exercises**

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Homework due Nov 13, 2023 10:13 CST

We will continue to use this dataset:

library(Biobase)

library(GSE5859Subset)

data(GSE5859Subset)

### Projections Exercises #1

1/1 point (graded)

Suppose you want to make an MA plot of the first two samples y = geneExpression[,1:2]. Which of the following projections of y gives us new coordinates such that column 2 versus column 1 is an MA plot?

$$\bigcirc \bigvee_{\mathsf{y}} \begin{pmatrix} 1/\sqrt{2} & 1/\sqrt{2} \\ 1/\sqrt{2} & -1/\sqrt{2} \end{pmatrix}$$

$$lacksquare$$
 y  $egin{pmatrix} 1 & 1 \\ 1 & -1 \end{pmatrix}$ 

$$\bigcirc \begin{pmatrix} 1 & 1 \\ 1 & -1 \end{pmatrix}$$

$$\begin{pmatrix} 1 & 1 \\ 1 & -1 \end{pmatrix}$$

~

Submit

You have used 1 of 2 attempts

• Answers are displayed within the problem

#### Projections Exercise #2

1/1 point (graded)

Say Y is  $M \times N$ , in the SVD  $Y = UDV^{\top}$  which of the following is **NOT** correct?

 $igcup DV^ op$  are the new coordinates for the projection  $U^ op Y$ 

igcup UDare the new coordinates for the projection YV

igodelight igodelight D are the coordinates of the projection  $oldsymbol{U}^{ op}oldsymbol{Y}$ 

 $\bigcirc \ U^{ op} Y$  is a projection from an M-dimensional to N-dimensional subspace.

**~** 

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You have used 1 of 2 attempts

**1** Answers are displayed within the problem

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