Blake Q's #16

August 5, 2020

Question 1: Matrix addition/subtraction

a) Calculate $A + A$ Is this the same as $2A$?
b) Calculate $A - B$
c) Calculate $A + B - C - D$ Is this the possible? If not, why?
d) Calculate $C + D$ (Fractions and decimals are allowed)

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

$$B = \begin{bmatrix} -6 & 3 & 3 & -10 \\ 1 & -1 & 1 & 0.5 \end{bmatrix}$$

$$C = \begin{bmatrix} 5 & 4 \\ -3 & -2 \end{bmatrix}$$

$$D = \begin{bmatrix} \frac{1}{2} & \frac{-3}{8} \\ 1.123 & 2\pi \end{bmatrix}$$

Question 2: Matrix Multiplication

Here are some more matrices named after some people. For your continence I have shortened their names to single letters. **The little dot means multiplication –>** $\cdot$

a) Calculate $3S$ This is scalar multiplication!
b) Calculate $J \cdot S$
b) Calculate $S \cdot J$ Is this the same as the last one?
c) Calculate $S \cdot K$ Is this the possible? If not, why?

$$John = J = \begin{bmatrix} 5 & 4 \\ -3 & -2 \end{bmatrix}$$

$$Steve = S = \begin{bmatrix} 3 & 1 \\ -1 & 2\pi \end{bmatrix}$$

$$Karen = K = \begin{bmatrix} \frac{\pi}{2} \\ 3.52 \end{bmatrix}$$