

### HW5 Question 3:

Suppose that we would like to perform the following task using MapReduce. Please determine the input/output of **each** mapper and reducer, and all intermediate key-value pairs generated in the process of MapReduce:

$$\begin{bmatrix} 2 & -3 & 1 & 5 \\ 7 & 2 & -1 & 0 \end{bmatrix} \begin{bmatrix} 3 \\ 5 \\ -6 \\ 9 \end{bmatrix}$$

Format: (<key>, <value>)

INPUT:

((0,0), 2)

((0,1), 3)

((0,2), 1)

((0,3), 5)

((1,0), 7)

((1,1), 2)

((1,2), -1)

((1,3), 0)

INTERMEDIATE KEY-VALUE

PAIRS:

(0, 6)

(0, -15)

(0, -6)

(0, 45)

(1, 21)

(1, 10)

(1, 6)

(1, 0)

OUTPUT:

(0,30)

(1, 37)