

Quiz 5: Matrix multiplication, systems

MAT 123, SUMMER 2016

NAME:

1. (10 points) Define the matrices $A = \begin{bmatrix} 1 & -1 \\ 2 & 3 \\ -2 & 0 \end{bmatrix}$, $B = \begin{bmatrix} 0 \\ -3 \end{bmatrix}$, and $C = \begin{bmatrix} -2 & 0 \\ 1 & 3 \end{bmatrix}$.

Evaluate each product, or state that it is undefined.

(a) AB

(b) BA

(c) C^2

2. (10 points) Suppose the the costs for a printmaking firm are described by the equation

$$C = 14x + 350,$$

where y is number of copies made (in thousands) and C is the cost (in thousands of dollars). The corresponding equation for the firm's revenue is

$$R = 16.5x.$$

How many copies does the company need to produce in order to break even?