

**Drill Quiz for Chapter 10 Section 3**

1. (3 points each) The following questions refer to these matrices.

$$A = \begin{bmatrix} 2 & -1 \\ 3 & 8 \\ 3 & -13 \end{bmatrix} \quad B = \begin{bmatrix} 2 & -7 \\ 1 & 4 \end{bmatrix} \quad C = \begin{bmatrix} -1 & 0 & 2 \\ 0 & 1 & 0 \\ 2 & 8 & 2 \end{bmatrix}$$

Which of the following products make sense? If the product makes sense, do the matrix multiplication. If the product does not make sense, explain why.

- a.  $AB$
- b.  $AC$
- c.  $CA$
2. (1 point each) Suppose  $A$  is an  $m \times n$  matrix, and  $B$  is a  $l \times k$  matrix.
- a. What must be true about  $n$  and  $l$  if the product  $AB$  makes sense?
- b. What must be true about  $m$ ,  $n$ ,  $l$  and  $k$  if the products  $AB$  and  $BA$  both make sense?
3. (4 points) Give an example of two  $2 \times 2$  matrices,  $A$  and  $B$  so that  $AB$  and  $BA$  are different. (This means you should invent two  $2 \times 2$  matrices, and then multiply them to show the two products have different answers).