

Simplify the expressions using the given matrices. If you cannot perform the given operations, state the reason.

$$A = \begin{bmatrix} -3 & 0 \\ 5 & 2 \\ -1 & 3 \end{bmatrix}$$

$$B = \begin{bmatrix} -1 & 12 & 10 \\ 3 & 7 & 11 \\ 4 & 0 & 13 \end{bmatrix}$$

$$C = \begin{bmatrix} -2 & 8 & 6 \\ 3 & -1 & 9 \end{bmatrix}$$

$$D = [-1 \ 4 \ 11]$$

$$E = \begin{bmatrix} -4 & 2 \\ -5 & 13 \end{bmatrix}$$

1. $-2A$

2. AC

3. $3AC$

4. DA

5. AD

6. AE

7. $AE + A$

8. $(AE + A)C$

9. $B(AE + A)$

10. BA

11. $BA + 2A$

12. $(BA + 2A)E$

13. B^{-1}

14. E^{-1}

15. $\text{Det } E$
