

Algebra 2
Test 7 Review

$$A = \begin{bmatrix} 3 & 7 \\ -4 & 2 \end{bmatrix} \quad B = \begin{bmatrix} -1 & 5 \\ -2 & 9 \end{bmatrix} \quad C = \begin{bmatrix} 1 & 0 & 4 \\ 3 & -1 & -2 \end{bmatrix} \quad D = \begin{bmatrix} -3 & 5 \end{bmatrix}$$
$$E = \begin{bmatrix} 1 \\ 0 \\ -3 \end{bmatrix} \quad F = \begin{bmatrix} 3 & -2 & 1 \\ -3 & 1 & 8 \\ -5 & 6 & -4 \end{bmatrix} \quad G = \begin{bmatrix} 3 \\ 1 \end{bmatrix} \quad H = \begin{bmatrix} -2 \\ 5 \end{bmatrix}$$

1. $AB =$
2. $A + B =$
3. $C(A + B) =$
4. $(A + B)C =$
5. $2C - AB =$
6. $AB + 3BA =$
7. $CE =$
8. $2CE + G =$
9. $AH =$
10. $AD =$
11. $DA =$
12. $2B - A =$
13. $FE =$
14. $EF =$
15. $\det(A) =$
16. $\det(F) =$

17. True/False for any matrices A and B :

- a. $A + B = B + A$
- b. $(A + B) + C = A + (B + C)$
- c. $AB = BA$
- d. $(AB)C = A(BC)$
- e. $A(B + C) = AB + AC$
- f. $(A + B)C = AC + BC$

18. Use Cramer's rule to solve the following systems:

- a. $\begin{cases} -3x + 4y = -49 \\ 11x + 9y = 85 \end{cases}$
- b. $\begin{cases} -5x + 2y = 71 \\ 16x + 7y = -53 \end{cases}$

19. Find the inverse of the following matrices:

- a. $\begin{bmatrix} 2 & 3 \\ -7 & 5 \end{bmatrix}$
- b. $\begin{bmatrix} -1 & 15 \\ 4 & 7 \end{bmatrix}$
- c. $\begin{bmatrix} 3 & 1 \\ -6 & 2 \end{bmatrix}$
- d. $\begin{bmatrix} 3 & -2 \\ 9 & 11 \end{bmatrix}$

20. Use inverse matrices to solve the following systems:

- a. $\begin{cases} -2x - 11y = 98 \\ -7x + 6y = -102 \end{cases}$
- b. $\begin{cases} 1.2x - 3.4y = 19.4 \\ 6.5x + 4.2y = -8 \end{cases}$