

**(Graphing utility acceptable)**

1. Given a matrix, identify the entry (ex.  $A_{24}$ ) **MGSE9-12.N.VM.6**
2. Calculate matrices that include a scalar with addition or subtraction. **MGSE9-12.N.VM.7**
3. Multiply matrices. **MGSE9-12.N.VM.8 AND 9**
4. Calculate the inverse of a matrix (2x2 and 3x3). **MGSE9-12.A.REI.9**
5. Determine if two matrices are inverses of each other. **MGSE9-12.N.VM.10**
6. Calculate the determinant of a matrix (2x2 and 3x3 matrices). **MGSE9-12.N.VM.12**
7. Apply matrix inverses to determine solutions of systems of equations (2x2 matrix.)  
**MGSE9-12.A.REI.8**
8. Apply matrix inverses to determine solutions of systems of equations (3x3 matrix).  
**MGSE9-12.A.REI.8**
9. Apply Cramer's rule to solve for one variable in the system of equations (3 linear equations). **MGSE9-12.N.VM.12**
10. Use determinant to determine if points are collinear. **MGSE9-12.N.VM.12**
11. Find value of x when given the vertices of a triangle and its area. **MGSE9-12.N.VM.12**
12. Application of matrices in systems of linear equations represented in word problems.  
**MGSE9-12.A.REI.8**