Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Accel PreCalc: Unit 5

Test Review

Period \_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Remember, the test will have two parts: one part where you must do all problems by hand (no calculator), and a second part where you may use a calculator. Problems #1-4 are like what you would see on the no calculator part of the test.

Given:

    

**1. Basic Matrix Operations.** Evaluate each expression, if possible. If impossible, explain why.

**a.** *AB* + *A*

**b.** *AC* – *D*

**c.** *D**E*

**d.** *CE*

**2. Determinants.** Find each determinant.

**a.** |*B*|

**b.** |*E*|

**3. Inverses.** Find each inverse, if possible. If impossible, explain why.

**a.** *D*-1

**e.** *E* -1

**4. Basic Operations.** Find the value of each unknown.

**a. **

**b. **

**5. Solving Using Inverses.** Solve each system of equations using inverse matrices. SHOW WORK!

**a.** 2*x* + *y* = 5

4*x* + 5*y* = 1

**b.** 3*x* + 10*y* = -5

*x* + 6*y* = 1

**6.** Tickets for a concert cost $24 if purchased in advance, and $32 if purchased at the door. 465 people attended for a total of $12,304.

**a.** Write a system of equations that would help you find the number of people who purchased tickets in advance and the number who purchased tickets at the door.

**b.** Write your system of equations as a matrix equation.

**c.** Solve your system of equations using inverse matrices.

**7.** Find a value of *k* so the determinant of  is 0. SHOW WORK!

**8.** Use Cramer’s Rule to solve the following. If the system does not have exactly one solution, state how you know.

|  |  |
| --- | --- |
| **a.** | 3*x* + 5*y* = 5  -2*x* + 6*y* = -22 |
| **b.** | 4*x* – 6*y* = 10  10*x* – 15*y* = 25 |
| **c.** | 3*x* + *y* = 4  5*x* + 4*y* = -5 |
| **d.** | 3*x* + 4*y* – *z* = 9  -2*x* – 3*y* + 4*z* = -14  4*x* – *y* = -16 |
| **e.** | 2*w* + 3*x* – 4*y* + *z* = 9  6*w* + 5*y* – 2*z* = -21  4*w* + 3*x* – 3*y* + 5*z* = 20  *x* + *y* + *z* = 10 |