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* = 1010*x* – 15*y* = 25 |
| **c.** | 3*x* + *y* = 45*x* + 4*y* = -5 |
| **d.** | 3*x* + 4*y* – *z* = 9-2*x* – 3*y* + 4*z* = -144*x* – *y* = -16 |
| **e.** | 2*w* + 3*x* – 4*y* + *z* = 96*w* + 5*y* – 2*z* = -214*w* + 3*x* – 3*y* + 5*z* = 20*x* + *y* + *z* = 10 |