Exam 3 – MTH 122 20\_\_ Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Instructor: Tom Cuchta

***Instructions: do any 7 of the following 8 problems. The bonus is not included in that. Mark on the score sheet which 7 problems you want me to grade.***

1. Use identities to Find the exact value of…
2. Verify the following identity:
3. According to Lambert’s law, the intensity of light from a single source on a flat surface at point P is given by where is a positive constant.
   1. Write in terms of the sine function.
   2. Why does the maximum value of occur when ?
4. Find the exact value of using the half-angle identity for cosine.
5. Verify the following identity:
6. Find when is in Quadrant II and .
7. Find the angle , , such that .
8. Verify the following identity:

(hint: .

***BONUS***: There are three half-angle identities for . State two of them.

Score Sheet

|  |  |  |
| --- | --- | --- |
| Problem | Grade it? | Score |
| Problem 1 |  |  |
| Problem 2 |  |  |
| Problem 3 |  |  |
| Problem 4 |  |  |
| Problem 5 |  |  |
| Problem 6 |  |  |
| Problem 7 |  |  |
| Problem 8 |  |  |
| BONUS | xxxxxxxxx |  |