

## Student Learning Outcomes for MATH 42

*Precalculus II: Trigonometric Functions*

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### Team Members:

**Team Leader:**

[Iaroslav Kryliouk](#) (8865) in MATH

**Other members:**

1. [Diane Mathios](#) (x864-5664) MATH

**Additional team members/notes about team:**

Iroslav Kryliouk, Lakshmi  
Vannisegaram

**Additional Notes:**

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### Outcomes:

**Outcome 1 Phase I: Statement**

Formulate, construct, and evaluate trigonometric models to analyze periodic phenomena, identities, and geometric applications.

**Outcome 1 Phase II: Assessment Strategy Used:**

Assessment Quarter: Winter 2011

Assessors: Diane Mathios

Assessment Tools: *No tools assigned.*

Sections being assessed: 09

**Outcome 1 Phase III: Reflect & Enhance**

**Number of people involved in Phase III:** 1

**Changes:**

This is the first time this outcome is being assessed

**Methods:**

Eight questions on the final exam were identified that pertained to the student learning outcome. Student results were recorded for each question. In the case of multiple choice (3 questions), the number of students answering correctly was recorded. In the case of free

response (5 questions), the number of points awarded was recorded. In addition, for these question, an analysis was done to identify what students missed, and what point assignment was deemed to indicate satisfactory proficiency.

**Findings and Conclusions:**

Question 1: 20/27 answered correctly Question 8: 23/27 answered correctly Question 9: 16/27 answered correctly Question 13 23/27 scored 7 out of 7; 4 out of 27 scored 4 out of 7. These students mislabeled one side of the triangle and thus have met proficiency. Question 14: 18/27 scored 9 or 10 out of 10. 9 scored less than that. Question 17: 18/27 scored 4 or 5 out of 5. 8 scored 3 out of 5. These students omitted one of the two solutions to a trig equation. They have achieved partial proficiency. Only 1 student scored 2 out of 5 and is not proficient. Question 18: 24/27 scored 8 or more points out of 10 and are proficient. 3 students scored less than 5 points and are not proficient. Question 19: 25 students scored 5 or more points out of 7 and are proficient. Only 2 students scored less than 5 points and were deemed not proficient. Students did very well on their knowledge of exact trigonometric values, use of identities, setting up an application problem using right or obtuse triangles, graphing a trigonometric graph, and solving a simple trigonometric equation. Students had more difficulty with exact values of inverse trigonometric functions.

**Enhancement (Planned Actions)****Part I:**

The definition of inverse trigonometric functions and the restricted range values for them is a difficult concept for students. In the future, I will be more clear about these definitions and look at visual ways to help students with this important concept.

**Part II:**

None needed.

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