Q21. Welcome to COA's new, online portal for completing your **Annual Program Update (APU).** Your work will be saved at the end of each section. If you partially complete a section, *that* section's responses will not be saved. Prior sections will be saved, should you need to stop and leave the portal for a period of time and then come back to it. If you have any questions about the portal during the process, please email Interim Dean Karen Engel at kengel@peralta.edu or call or text her cell phone at (510) 381-5292. For questions about your program or the process, please contact your instructional dean or service area or administrative unit vice president. Thank you!

Q1. Please select the discipline, department or program:

MATH

Q102. Please select the Program Type:

- (•) Instructional
- ( ) Student Services
- ( ) Administrative Services

Q2. Please provide the name of the person(s) completing this Program Review:

Vanson Nguyen

Q103. The mission of College of Alameda is to serve the educational needs of its diverse community by providing comprehensive and flexible programs and resources that empower students to achieve their goals.

Q3. Please provide the mission statement for your program:

COA's Math Department is dedicated to providing a comprehensive and flexible program that enables students to transfer to a four-year institution with a major in Mathematics, Applied Mathematics, or other math- or science-oriented fields. Students who have completed the program will be mathematically prepared to succeed in junior level courses of the mathematics major, and will have already satisfied the math breadth requirements to graduate in any major.

Q104. Please specify the **date** of your program's last Comprehensive Program Review (month and year):

October 2015

Q105. Cut and paste the program goals and administrative unit outcomes (AUOs) from your program's most recent Program Review or AUO documents into the left-hand column. Then complete the remaining columns of the table below. Program Review Archives, PCCD and COA Strategic Goals can be found on your program's APU home page.

	PCCD goal advanced upon completion (#)	COA goal advanced upon completion (#)	Progress on goal or AUO attainment (specify: the date completed, revised, or ongoing)	Explanation or Comments (describe any revisions or impediments)

Assessment Assess all courses and increase participation of faculty. The reason is to improve instruction through the process.	A.2, A.3, A.4, D.1, D.2	3,4,5	Ongoing	This process is continually on-going. The department has a monthly SLO assessment meeting to develop and analyze SLO assessments.
Curriculum (if applicable) Introduce Math 206 for class offerings; the UC's and CSU's have given blessing to having the class as pre-requisite for Math 13. Activate and offer Math 1 in lieu of Math 2. Math 3A has pre-requisite of Math 2 or Math 1 & 50. Currently, Math 2 has a pre-requisite of Math 50. On the other hand, Math 1 can be taken concurrently with Math 50. The department plans on offering both Math 1 and Math 50 in the same term to accelerate students to Math 3A.	A.1, A.3, A.4 C.2, D.1	3,4,5	Completed	Math 1 and 206 are regularly offered each term.
Instruction (if applicable) Attend professional development activities to address low success rates in African-American and Latino students. Improve hybrid course offerings with appropriate hardware and software.	A.1, A.4, C.2	3,4,5	Ongoing	With secured grant money, the department will invite all faculty to CMC3, a statewide professional development conference. Additionally, the department is sending 3 faculty to 3CSN's California Acceleration Project to help develop accelerated courses such as Math 213
Student Services and Student Equity Math Jam is a 1 or 2 week intensive that helps students with both improved scores on assessment of placement into initial math course or, more commonly, to build math skills leading into a semester to mitigate mathematical rust from time off. Regarding the latter, there will be an emphasis on non-transferable courses, but trigonometric assistance will be provided for calculus students. Supplemental instruction (SI) is a separate section of Learning Resources (LRNRE) that is linked with a math course that offers support for students in the form of soft skills and general assistance with concepts.	A.2, A.4, C.2, D.1	3,4,5	Ongoing	Math Jam has been up and running twice. The LRNRE course has been modified to be Math 213 which serves as the co-requisite to Math 13.
Professional Development, Institutional and Professional Engagement, and Partnerships Attend, participate and present at local conferences about teaching and teaching mathematics. Develop relationships with high school teachers to learn about common core curriculum and brainstorm other innovative programs.	A.1, A.3, A.4, B.2, D.1	1,3,4,5,7	Ongoing	Through Bridging the Gap and a new initiative for credit recovery, conversations will continue to happen.

Other Program Improvement Objectives or AU Outcomes Hire 2 full-time faculty	A.1, A.3, A.4, B.2, D.1	1,3,4,5	Ongoing	The department has replaced two departures. We are requesting 2 additional full-time faculty which is how many were in existence in the past decade.
Other Program Improvement Objectives or AU Outcomes				

Q106. Please review and reflect upon the data for your program (see Data Dashboards on the left of the COA Program Review home page). Then describe any significant changes in the following items and discuss what the changes mean to your program. Focus on the most recent year and/or the years since your last comprehensive program review.

Q107. Using the **Enrollment Data Dashboard**, review any changes in the student demographics of your students. Particularly consider changing number (or percentage) of student by age, gender, ethnicity, and special populations (foster youth, veterans, low income, students with disabilities). Comment on any changes.

Over the past 3 years, there was a peak in enrollment in Spring 2016 and has slowly declined since then. Across the board (ethnicity, age, gender and special populations) enrollment has declined except for Latinx students who have remained flat in the enrollment patterns over the past 4 terms.

Q108. Using the **Enrollment Data Dashboard**, review and comment about any changes in enrollment by course.

In the calculus sequence, the enrollment of Math 3A and 3B have been up and down where as 3C, 3E and 3F have held steady. Similar to Math 3A and 3B, the algebra courses (201, 203) have had enrollment up and down.Math 250 and 253 has been declining and that is expected with the implementation of multiple measures; however, multiple measures doesn't explain why Math 201 and 203 enrollment have been up and down. The only explanation that can be explained is that Math 203 and 3B have increased enrollment in Spring terms because of the number of new students who start at Math 3A or 201 in the fall term. Last, our enrollment of Math 13 has slowly increased over the past few terms without decline.

Q109. Using the **Productivity Data Dashboard**, review and comment on any changes in the productivity of your program and courses.

Although higher than the college, the department's productivity is on a slow decline. This is likely due to the implementation of dual enrollment and offering new courses: dual enrollment pilots have had lower enrollment numbers and new course offerings may take a while to gather steam.

Q110. For Student Services units, consider and comment on any changes in the number of student contacts and the success rates of the students served.

Q111. Using the **Course Completion** and Retention Data Dashboards, review and comment on any changes in the completion and retention rates of your program's courses.

Overall, the success rates have hovered around 60% with a slight increase over the past 2 terms. With statistics, the course with steady enrollment increase, the success rates have increased over the past 2 terms by 10%. For African-Americans (67%), Latinx (67%) and Pacific Islanders (100%), success rates have dramatically increased over the past 2 terms with a high point in Spring 2017 although the college hasn't served many Pacific Islander students. All course offerings remained fairly steady except for Math 201 which had a slight increase over the past few terms, Math 253 and 50 have had declines over the past few terms.

Compared to the whole college, the department has lower overall retention. Most courses had retention around the department average with the exception of Math 50 which has much lower retention. This makes sense in that many students change their majors after enrolling in Trigonometry. With respect to the Calculus sequence, Math 3A has the lowest retention, which I suspect is for the same reason why Math 50 has low retention. Again, Math 13 has the highest performing data.

Q112. Using the **Course Completion** and Retention Data Dashboards, review and comment on any changes in the completion and retention rates of your program's **Distance Education or Hybrid** classes versus **face-to-face** (or lecture) classes. Use the DE filter. Set it to "NULL" to review only face-to-face classes.

In general, hybrid offerings don't perform as well as face-to-face with the exception of 50% or less online during the Spring 2017 term. Other than that, the success rates are about 10% points below face-to-face offerings.

There aren't much differences in retention rates for face-to-face versus hybrid offerings. For courses that are offered less than 50% online, the retention rates have fluctuated.

Q113. Review and reflect on other program specific data or unplanned events that reflect significant changes in the program.

New course offerings and dual enrollment has affected productivity and enrollment. There is an interesting tension to sit with when looking to increase hybrid or online offerings. On one hand, it provides more access to students; on the other hand, students don't perform as well in course completion.

Q114. Using the **Equity Data Dashboards**, please review the student success data for your program and comment upon it. Do performance gaps exist in the student success or achievement rates for disproportionately impacted students, including African-American, Hispanic/Latino, Filipinos/Pacific Islanders, foster youth, veterans, students with disabilities or other groups not listed here?

- (●) Yes
- ( ) No

Q115. If differences exist, please detail the differences and describe the activities your program is making to address the differences. How will your program evaluate the effectiveness of these activities?

Course completion:
For Latinx students, they fall just below the equity line. African-American students are well below the equity line. Pacific Islander students have fluctuated between being right at the equity line and falling well below.

Retention:
There is almost identical distribution in retention among Latinx, African-American and Pacific Islander students compared to course completion.

Action: we are looking to reduce the sequence which will affect course completion, but improve the metric of transfer-level course completion over a shorter period of time. Also, we are looking to revamp our bootcamp, Math Jam, to help students in these accelerated courses. We will work with the PRIE office to find that data.

Q116. What curricular, pedagogical or other changes has your department made since the most recent program review?

We have implemented some acceleration courses. Since last year, we have implemented a co-requisite course allowing any student to enroll in statistics provided that they take it with a support course that is linked to the statistics course. In addition, we have increased the number of offerings of accelerated courses (Pre-stats) and will offer a new combined Algebra course (Accelerated STEM).

Q117. Were these changes based on assessment of student learning outcomes at the course or program level?

- ○ Yes
- ◉ No

Q118. Please identify the assessment used.

This question was not displayed to the respondent.

Q119. Please describe the basis for the change if assessment was not used (choose all that apply).

- ☐ Title 5 requirements
- ☐ Certification requirements
- ☑ Other
  Equity data

Q120. Attach a summary depicting the program's progress on assessment of course and program level outcomes (SLOs and PLOs).

SLO's to do.docx
12.9KB
application/vnd.openxmlformats-officedocument.wordprocessingml.document

Q121. Please evaluate your program's progress on assessment. What are the plans for futher assessments in the upcoming academic year? Please include a timeline and/or assessment plan for the future.

We are in year 3 of the cycle for SLO's and will finish the cycle; we will be reevaluating and changing them at the end of this cycle. We are in year 2 of the PLO cycle.

Q124. What does your program do to ensure that meaningful dialogue takes place in both shaping and assessing course and program level outcomes? Where can one find the evidence of the dialogue?

The department has been holding regular meetings to discuss the SLO cycle. There are 5-8 regular attendees and everyone volunteers for tasks. Agendas and SLO's are held in a Google Drive folder.

Q123. Describe your plans for improvement projects based upon the assessment results.

Many of the improvement plans discuss explaining better or help specific students. This type of change requires some professional development and the department is running a training regarding affective domain issues that don't necessarily show up in summative assessments, but the faculty well understand how they can affect learning.

Q125. Attach evidence of these assessment results (the assessment report from Taskstream, departmental meeting notes, or the assessment spreadsheet showing these results).

Assessment Findings Report 16-17.xlsx
15.3KB
application/vnd.openxmlformats-officedocument.spreadsheetml.sheet

Q126. Is your program one of the below?

- ○ CTE program
- ○ Counseling Department
- ○ Library Services
- ○ Student Services or Administrative Unit
- ◉ None of the Above

Q128. **For CTE Programs:** Please describe any recommendations resulting from advisory committee meetings that have occurred since your last program review.

This question was not displayed to the respondent

Q129. Is your CTE program working with a Deputy Sector Navigator?

This question was not displayed to the respondent

Q130. Briefly describe your CTE programs' work with the Deputy Sector Navigator?

This question was not displayed to the respondent

Q131. Is your CTE program currently participating in any grants? Please discuss your progress in meeting the stated goals in the grant(s).

This question was not displayed to the respondent

Q132. **For Counseling:** What has the counseling department done to improve course completion and retention rates? What is planned for the future?

This question was not displayed to the respondent

Q134. What is the counseling department planning to do to improve course completion and retention rates in the future?

This question was not displayed to the respondent

Q133. What has the counseling department done to improve SSSP counseling services? Please discuss your progress in improving SSSP counseling services.

This question was not displayed to the respondent

Q135. **For Library Services:** Please describe any changes in the library services, collections or instructional programs since the last program review or annual program update.

This question was not displayed to the respondent

Q136. Please fill in the information below re Library Services:

This question was not displayed to the respondent

Q137. **For Student Services or Administrative Units:** Briefly describe the results of any student satisfaction surveys or college surveys that included evaluation and/or input about the effectiveness of the services provided by your unit.

This question was not displayed to the respondent

Q138. How has this information informed unit planning and goal setting?

This question was not displayed to the respondent

Q139. Briefly describe any changes that have impacted the work of your unit.

This question was not displayed to the respondent

Q146. Please find the Prior-Year Resource Utilization Self-Evaluation Template in your Program Review home page, review your expenditures for 2016-17 and complete the form. Upload it here when you are finished.

Prior-Year-Resource-Utilization-Self-Evaluation-Template.xlsx
21.8KB
application/vnd.openxmlformats-officedocument.spreadsheetml.sheet

Q140. **Human Resources:** If you are requesting new or additional positions, in any job classification, please explain how new positions will contribute to increased student success:

	Already requested in recent program review?	Program goal (cut and paste from program review)	Connected to assessment results and plans?	Contribution to student success	Alignment with college goal (#)	Alignment with PCCD goal (letter)
Request 1: Increase full-time faculty to 6	Yes	Hire 2 full-time faculty		Increase capacity of department with projects and representation on institutional committees	2,3,4,5,9	A.1, A.3, A.4, B.2, D.1

Request 2: Grader for Math 3B and up	No			Increase student feedback, increase amount of content covered in classes	2,3,4,5	A,B,D
Other:						

Q141. **Technology and Equipment:** Please explain how the new technology or equipment will contribute to increased student success:

	Already requested in recent program review?	Program goal (cut and paste from program review)	Connected to assessment results and plans?	Contribution to student success	Alignment with college goal (#)	Alignment with PCCD goal (letter)
Request 1: Computers for a dedicated mathematics computer lab	Yes	Improve hybrid offerings with technology		Increase access for students taking hybrid and improve instruction through technology in face-to-face courses.	3,4,5,7	A.1, A.4, C.2
Request 2: Set of graphing calculators for two classes (Ti-84)	No			Increase student learning through hands-on technology		A,B,D,E
Other:						

Q142. **Facilities:** How will this facilities request contribute to student success? Indicate whether and how facilities maintenance and repair affected your program in the past year with your request.

	Already requested in recent program review?	Program goal (cut and paste from program review)	Connected to assessment results and plans?	Contribution to student success	Alignment with college goal (#)	Alignment with PCCD goal (letter)
Request 1: Dedicated Math computer lab	Yes	Attend professional development activities to address low success rates in African-American and Latino students. Improve hybrid course offerings with appropriate hardware and software.		Provides Access to Math instructors and students for learning through technology	3,4,5,7	A.1, A.3, A.4, B.2, D.1
Request 2:						
Other:						

Q145. **Professional Development or Other Requests:** How will the professional development (PD) activity contribute to student success? What PD opportunities and contributions will your program make to the college in the future?

	Already requested in recent program review?	Program goal (cut and paste from program review)	Connected to assessment results and plans?	Contribution to student success	Alignment with college goal (#)	Alignment with PCCD goal (letter)

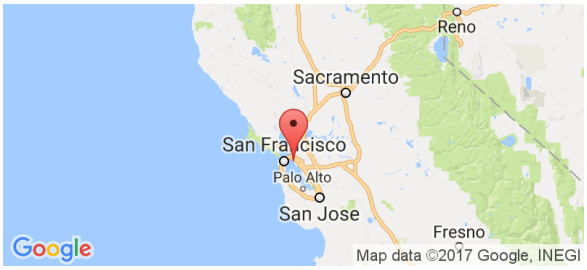
Request 1: Funding for attending professional development conferences	Yes	Offer accelerated 6 unit Algebra course as pathway to calculus for STEM majors and accelerated pathway to statistics		Development in working with students who need the most help is not regularly offered at the school. PD would exist outside the school and faculty will participate in these opportunities.	2,3,4,5,9	A.1, A.3, A.4, C.2, D.1
Request 2:						
Other:						

Q144. Congratulations. You have completed your Annual Program Update for 2017-18. If you have completed each question in each section, you may close this tab. Your answers will be saved and submitted. Thank you!

Location Data

Location: (37.773498535156, -122.27880096436)

Source: GeoIP Estimation



Assessment Cycle Details

Report Generated by Taskstream

COURSE ASSESSMENT

2016-2017 Assessment Cycle; Assessment Plan and Assessment Findings

COURSE ASSESSMENT

Tuesday, September 26, 2017

Outcome Set	Outcome Description	Measure Title
MATH 13 Introduction to Statistics Student Learning Outcomes	Develop problem solving abilities: Synthesize data; translate words into math language; and construct an abstract model that describes the problem. (Proof and Deductive Reasoning skills)	Mean vs median
MATH 201 Student Learning Outcomes	Develop problem-solving abilities, synthesize data, translate words into math language, and construct an abstract model that describes the problem.	Slope

MATH 202 Geometry Student Learning Outcomes	Develop problem solving abilities: Synthesize data, translate words into math language, and construct an abstract model that describes the problem.	Problem Solving
MATH 203 Intermediate Algebra Student Learning Outcomes	Develop problem solving abilities: Synthesize data , translate words into math language, and construct an abstract model that describes the problem.	Problem Solving

MATH 225 Mathematics for Technicians Student Learning Outcomes	Develop problem solving abilities: Synthesize data, translate words into math language, and construct an abstract model that describes the problem.	Problem Solving
MATH 250 Arithmetic Student Learning Outcomes	Given data, translate words that describe relationships among data elements into mathematical language.	Problem Solving
MATH 253 Pre-Algebra Student Learning Outcomes	Students will be able to solve a linear equation and to determine if a specific value is a solution to that equation.	Solve Linear Equations

MATH 3A Calculus I Student Learning Outcomes	Develop problem solving abilities: Synthesize data, translate words into math language, and construct an abstract model that describes the problem. (Proof and Deductive Reasoning skills)	Proof and Deductive Reasoning
MATH 3B Calculus II Student Learning Outcomes	Given data, students will analyze information, and create a graph that is correctly titled and labeled, appropriately designed, and accurately emphasizes the most important data content. (Graphing)	Graphing
MATH 3C Calculus III Multivariable Calculus Student Learning Outcomes	Students will be to write and manipulate complex algebraic expressions and general functions and integrate algebraic and transcendental functions of several variables. (Compute, Simplify, and Solve)	Compute, simplify, and solve

MATH 3E Linear Algebra Student Learning Outcomes	Develop problem solving abilities: Synthesize data, translate words into math language, and construct an abstract model that describes the problem. (Proof and Deductive Reasoning skills)	Proof and Deductive Reasoning
MATH 3F Differential Equations Student Learning Outcomes	Develop problem solving abilities: Synthesize data, translate words into math language, and construct an abstract model that describes the problem. (Proof and Deductive Reasoning skills)	Proof and Deductive Reasoning
MATH 50 Trigonometry Student Learning Outcomes	Student will be able to manipulate algebraic and trigonometric expressions to simplify them.	Simplify and Solve

Measure Type/Method	Details/Description	Criteria for Successful Performance	How will you collect this information?
Indirect - Other	Students were prompted to explain the difference of mean vs median.	100% participation	Homework
Direct - Exam	Using concept of slope, rise and run	70% correct responses	Quiz

Direct - Exam	List given facts, draw appropriate diagram, and list any outside formulas to use. (synthesize and understand.) Create equation that describes the problem. (Translate) Students will be able to calculate the distance between two points, determine measures of central angles and arc length, find areas of regular polygons, and convert degrees to radian measure.	70% average exam scores	Scantron exams or Short Answer exams
Direct - Exam	List given facts and outside formulas to use. (synthesize and understand.) Create equation that describes the problem. (Translate) Solve the equation.	5 point scale for each part of each question with 3 or higher being satisfactory (see rubric). We would like to see 70% of students with satisfactory (or higher).	Assessment questions to be incorporated in final exams for a sample of 5 sections.

Direct - Exam	Solve mechanics problems involving basic rules of algebra. Use measuring instruments. Read and interpret diagrams and tables of data. Solve problems involving the use of formulas. Solve basic geometry problems involving regular geometric shapes.	70% average correct answers	Scantron tests or Short answer tests
Direct - Other	List given facts and outside formulas to use. (synthesize and understand.) Create equation that describes the problem. (Translate) Solve the equation. Students will be able to successfully solve basic word problems involving one basic operation (multiply, divide, add, subtract).	70% of students score 2 or higher	Given as homework assignment
Direct - Exam	Students will be able to solve basic linear equations in one variable. Students will be able to evaluate an equation at a specific value of variable and determine if value is a solution to the equation.	70% of students will score 2 or higher	Short Answer tests

Direct - Exam	List given facts and outside formulas to use. (synthesize and understand.) Create equation that describes the problem. (Translate) Solve word problems that can be modeled by algebraic or transcendental equations. Solve word problems involving the derivative, including max/min, and related rates word problems. Solve problems involving position, velocity, and acceleration of a body in motion.	70% average correct answers	Scantron tests or Short answer tests
Direct - Exam	Graph algebraic and transcendental equations in two variables. Graph functions in two variables and draw figure created from revolving graph around horizontal or vertical axis.	70% average correct answers	Scantron exams or Short Answer exams
Direct - Exam	Perform algebraic operations on vectors in two or three spaces Compute derivatives of algebraic and transcendental functions of several variables. Compute partial derivatives. Compute integrals of algebraic and transcendental functions of several variables, where functions are in the Cartesian or the Polar Coordinate System	70% average correct answers	Scantron tests or Short Answer tests

Direct - Exam	Solve problems involving the properties of linear transformations. Prove basic statements on vector spaces including concepts of linear independence, basis, and dimension. Solve problems involving projections in the plane. Solve application problems involving systems of equations and matrices. Solve applications involving differential equations	70% average correct answers	Scantron tests or Short answer tests
Direct - Exam	Solve word problems involving first-order differential equations. Solve initial value and boundary value problems. Solve rate problems and others involving mechanics. Solve application problems involving second-order differential equations (forced motion, electric circuits, other physics problems).	70% average correct answers	Scantron tests or Short Answer tests
Direct - Exam	Students will be able to convert points and functions from rectangular coordinates to polar coordinates and vice versa. Students will be able to verify trigonometric identities and simplify trigonometric expressions. Students will be able to solve basic trigonometric equations	70% average correct answers	Scantron exams or Short Answer Exams

Contact Person	Supporting Attachments	Findings Title	Summary of Findings
Department chair		Findings for Mean vs median	Most students had a basic understanding of the difference between the two. Some could articulate deeper thinking and some didn't complete the assignment at all. It was given as a homework assignment.
Department Chair	Slope assessment (Adobe Acrobat Document)	Findings for Slope	Students had a range of knowledge on this assessment. Most of the students had the major concept correct. Some students completely missed the concept or had little knowledge of the concept.

Department Chair (C Abadia 11-12)	Draw 30-60-90 right triangle (Word Document (Open XML))	Findings for Problem Solving	Many students earned high marks on this. More than a third of students scored 2 or lower.
Department Chair - Michael Valdez	Graphing parabola (Word Document (Open XML))	Findings for Problem Solving	This formative assessment was given as an in-class quiz. It crossed the fine line between conceptual thinking and rote memorization. It does not ask for a correct answer, per se, but instead asks students to respond qualitatively. Some students are not accustomed to responding in this manner in math courses as the data reflects.

Department Chair (K Pernell 09-10)	Drum application (Word Document (Open XML))	Findings for Problem Solving	Most students understand the concept but likely didn't perform well because it was on an exam.
Department Chair	Supermarket prices and weights (Word Document (Open XML))	Findings for Problem Solving	Results were mixed, but everyone earned a "passing grade". It was a long quiz with many parts. Students made the wrong decision when there were similar quantities.
Department Chair	Solving linear equations (Word Document (Open XML))	Findings for Solve Linear Equations	All students scored a "passing grade." There were minor mistakes with negatives.

Department Chair (K Pernell 09-10)	Definition of derivative (Word Document (Open XML))	Findings for Proof and Deductive Reasoning	This was given as an individual quiz. Small algebra mistakes were common for students, although they varied from factoring to distributing negatives. Some students missed the major concept completely not using the appropriate formula.
Department Chair (K Pernell 09-10)	Fall 2016 Math 3B Assessment Problems.docx (Word Document (Open XML))	Findings for Graphing	This was given on the final exam. Many students performed well on this task.
Department Chair (K Pernell 09-10)	Math 3C Parametric equations (Adobe Acrobat Document)	Findings for Compute, simplify, and solve	This was given as a homework assignment. Many students scored high on this assessment and possibly worked together.

Department Chair (K Pernell 09-10)	Eigenvalues (Adobe Acrobat Document)	Findings for Proof and Deductive Reasoning	This was given as part of a daily quiz. There were many layers to the problem: solve characteristic equation, (recognizing that eigenvalues will be solutions to the characteristic equation), finding the multiple roots and identifying multiplicities.
Department Chair (Pernell 09-10)	Second order differential equations (Adobe Acrobat Document)	Findings for Proof and Deductive Reasoning	This was given as a homework assignment and everyone who completed the assignment earned full credit. A few individuals did not do the assignment at all, but later turned it in and earned partial credit. It's very possible students worked collaboratively on this and that's fine.
Department Chair (K Pernell 09-10)	Solving trig equations (Word Document (Open XML))	Findings for Simplify and Solve	Most students were able to isolate the sin x. Half of the students missed the period adjustment which means that they also missed the extra solutions.

Successful Performance Target Met?	Actual Performance Data	Use of Results/Plan of Action
Met	100% of students who turned in said the median was the middle of an ordered set. 90% of students who turned in said mean was the average of a set. 5% of students who turned in said the median is not affected by outliers.	Students can generally calculate mean and median, but not many shared the impact of outliers. The latter is quite important and will be emphasized in future iterations.
Met	4 points - 16 students 3 points - 6 students 2 points - 11 students 1 point - 4 students 0 points - 6 students	ESL students have problems articulating in English. Doing similar problems repetitively helps with memorization.

Met	4 points - 15 students 3 points - 7 students 2 points - 9 students 1 point - 4 students	Provide more support for struggling students.
Met	Clear articulation - 7 students partially clear - 8 students rather ambiguous - 3 students not relevant - 6 students no answer - 8 students	Continue to use formative assessments to change the way students think about mathematics.

Not Met	3 points - 2 students 2 points - 2 students 1 point - 5 students 0 points - 2 student	Utilize group assessments or formative assessments in the future. Many of these students have math anxiety and don't perform so well on exams even though they already know the material.
Met	A - 13 students B - 3 students C - 10 students	This was 4 questions in one assessment. Next time, we will create a single question to single out a concept. Also, we will spend time helping students think about what the question really needs so they can apply the same idea to different types of problems.
Met	A - 13 students B - 3 student C - 7 students	Be sure to have students read directions and be careful with their steps.

Met	4 points - 12 students 3 points - 10 students 2 points - 8 students 1 point - 2 students 0 points - 3 students	Provide more support through group work and referral to tutoring.
Met	3 points - 25 students 2 points - 5 students 1 point - 4 students 0 points - none	Provide a more interesting example of exact length of a curve, a real world example.
Exceeded	3 points - 29 students 2 points - 2 students 1 point - none 0 points - none	Explain more about the concept and how t affects the lines and planes.

Met	3 points - 7 students 2 points - 8 students 1 point - 2 students 0 points - 2 students	Have students reflect on their process prior to taking the quiz, allowing them to write down all they know. Also, some students didn't have time to complete the homework on time and it showed in the scores.
Exceeded	3 points - 30 students 2 points - 0 students 1 point - 2 students 0 points - 1 student	Homework is found to be more integral in higher levels of mathematics. The math department is looking to see how exams may work. Also, this problem was fairly straight forward.
Not Met	4 points - 10 students 3 points - 4 students 2 points - 7 students 1 point - 7 students 0 points - None	There was a range of student abilities for this assessment. Students can work together in a future assessment to help bring up those who struggled the most.

Prior Year Resource Utilization Self-Evaluation Form

Directions: Please review your 2016-17 resource allocations and expenditures prvided in the **Expenses 2016-17** tab below. Enter them below and evaluate your use of those funds by completing the table below. Please keep your responses to less than 100 words. If there is additional information, please email it to Interim Dean Engel kengel@peralta.edu. Thank you.

College: COA
ine, Department or Program: Math
Contact Person: Vanson Nguyen
Date: 9 27 17

Funding Source	2016-17 Funding Allocated	2016-17 Funding Expended	Net Expended	Please describe the impact of these expenditures on your **Program Goals**	If you have quantitative evidence of the impact of these expenditures, please provide it here	Please describe the impact of these funds on your **students' outcomes**	If you were not able to utilize all of your resources last year, please explain
General Fund			0				
Instructional Equipment			0				
Instructional Supplies	1,100	1,083	17.13	With the implementation of new courses (206), we util		We have yet to grab the data, but we believe Ma	
Fund 10			0				
Measure A			0				
Strong Workforce			0				
Perkins			0				
Equity		17,028	-17027.57	Money was spent on Math Jam and helped us reach ou		We have had small numbers of students particip	
Basic Skills		20,425	-20425.48	This money was spent on having a faculty member in th		We have not gathered data on how tutoring imp	
Work-Study		939	-938.78	We did not spend money on work-study.		None	
Other			0				

TOTAL			0				

With which of the College's 10 college goals do these expenditures best align? (See tab below)
1,3,4,5,7
1,4,5
1,3,4,5

Class	Outcome 1	Outcome 2	Outcome 3	Outcome 4
Ex: Math 1000	Done	Done	Students will graph lines…	
Math 13	Done	Students will be able to compute and interpret probabilities using binomial and normal distributions	Done	N/A
Math 201 Algebra	Manipulate algebraic expressions to simplify them	Done	Done	
Math 202 Geometry	Done	Done	Write the converse, inverse, and contra-positive of basic logical statements.	N/A
Math 203 Intermediate Algebra	Done	Done	Determine if an algebraic expression is an equation, classify the equation, then solve the equation (and check the solution).	Given data, analyze information, and create a graph that is correctly titled and labeled, appropriately designed, and accurately emphasizes the most important data content.
Math 225 Mathematics for technicians	Done	Done	Given data, analyze information, and create a graph that is correctly	N/A

			titled and labeled, appropriately designed, and accurately emphasizes the most important data content.	
Math 250 Arithmetic	Done	Done	Done	N/A
Math 253 Algebra	Student will be able to compute basic arithmetic calculations in an everyday situation and manipulate algebraic expressions to simplify them. (Includes Order of Operations and collecting like terms)	Done	Done	N/A
Math 3A Calculus I	Done	Given data, students will analyze information, and create a graph that is correctly titled and labeled, appropriately designed, and accurately emphasizes the most important data content. (Graphing)	Done	N/A
Math 3B Calculus II	Develop problem solving abilities: Synthesize data, translate words into math language, and construct an abstract model	Done	Done	N/A

	that describes the problem. (Proof and Deductive Reasoning skills)			
Math 3C Calculus III	Done	Given data, students will analyze information, and create a graph that is correctly titled and labeled, appropriately designed, and accurately emphasizes the most important data content. (Graphing)		N/A
Math 3E linear Algebra	Done	Given data, students will analyze information, and create a graph that is correctly titled and labeled, appropriately designed, and accurately emphasizes the most important data content. (Graphing)	Done	N/A
Math 3F Differential Equations		Given data, students will analyze information, and create a graph that is correctly titled and labeled, appropriately designed, and accurately emphasizes the most important	Done	N/A

		data content. (Graphing)		
Math 50 Trigonometry	Develop problem solving abilities: Synthesize data, translate words into math language, and construct an abstract model that describes the problem. (Proof and Deductive Reasoning skills)	Done	Done	N/A