

Faculty + Tutor Leaders + Collaboration = Success

ACTLA 2018 – San Diego

Tanin Hooshmand

Eddie Tchertchian

LA Pierce College

Introduction



Tanin Hooshmand
Math Tutor Leader



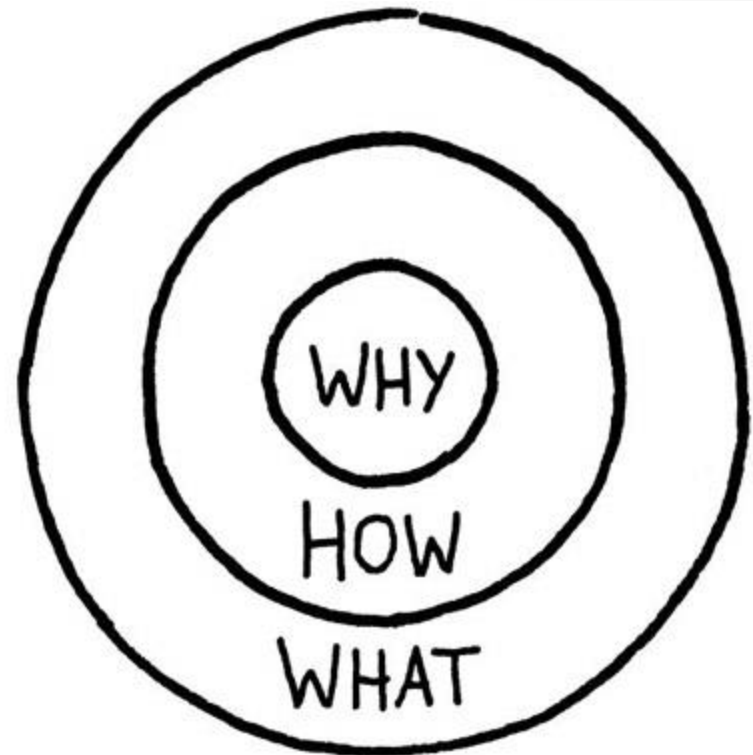
Eddie Tchertchian
CAS Math Specialist

Who we are

- Math Tutor Leader at LA Pierce College Center for Academic Success (CAS)
 - Paid at a slightly higher rate
 - Go through tutor training first semester + “advanced” option.
 - Work with faculty on contributing tutor training curriculum, and facilitate activities during general training sessions and subject-specific breakouts
 - Work with faculty on various projects: present workshops, record curriculum videos, create learning materials, etc.
- Math Specialist at CAS
 - Hire, supervise training of, and evaluate all math tutors at the center.
 - Create math-related curriculum to help improve math tutoring experience at the CAS
 - Work closely with CAS Director & other faculty on various projects

Why, How, What

- WHY
 - Improve the tutoring experience at CAS & in turn increase student success in classes
- HOW
 - Collaboration between math specialist, faculty, tutor leaders, and tutors
- WHAT
 - Work done through various projects affecting the scope of student success campus-wide

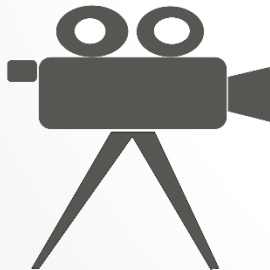


Outline/Projects

- Video project
- Math workshops
- Math handouts
- In-class tutoring-related activities
- Virtual tutoring
- Tutor training
- Tutor mentoring

Video Project

- Created 10-15 minute math videos for Pierce College
- Videos focused on refresher topics, as well as key concepts from algebra and calculus
- Available on CAS YouTube Channel



<https://youtu.be/j-oC-lxvUcU>

Video Project



- Writing “scripts” → organizing a short presentation on a math topic – what do I say? How do I do it?!
- Using technology
 - Video cameras
 - Editing software & work with YouTube
 - Dropbox for scripts
 - Email communication with faculty
- New appreciation for coming up with math examples – how do teachers do it?!



Video Project

- Helpful for own teaching – breaking topics down in great detail one-on-one
- “Teaching 101”
- Use videos as resources campus-wide
 - Assign them as extra credit
 - Use them when students are absent
 - Use them as review material based on exam/performance on assignment



Math Workshops



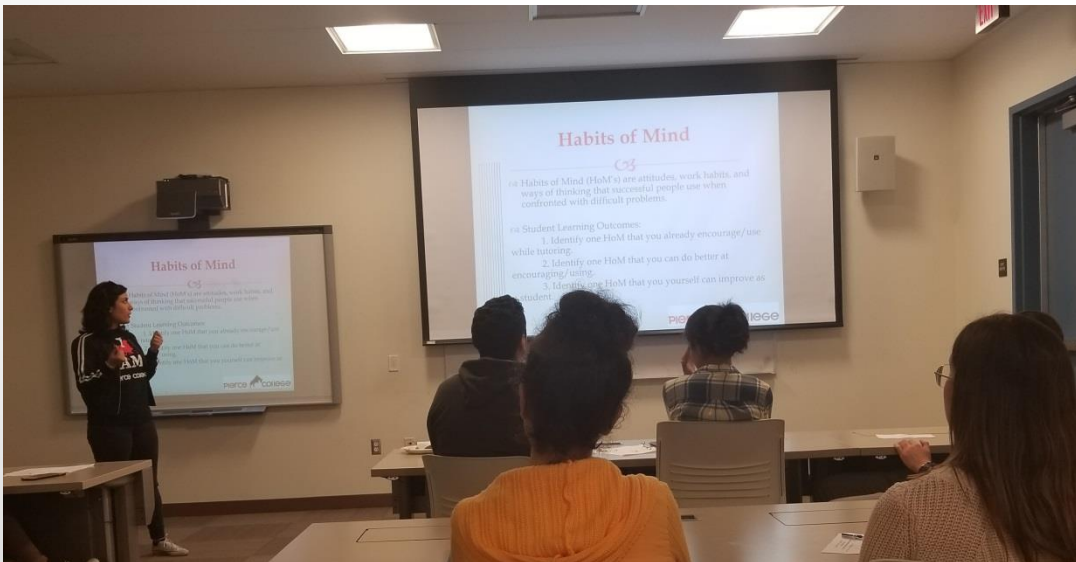
Math Workshops

- One-hour workshops focused around:
 - Key math concepts from all levels
 - Refreshers from pre-requisite course
 - Additional support for current material
 - Technology-based presentations
 - How to use your TI Calculator
 - Math homework software
 - Mathematica
- Scheduled to align with courses



Math Workshops

- Lesson planning
- Using different resources
- Classroom dynamics
- Confidence in classroom setting
- Work with diverse student body



Math Workshops

- Peer-to-peer learning
- NOT an extension of lecture
- Very interactive/hands-on
- Makes students more comfortable with tutors & CAS as a learning environment
- Use it as extra credit/assignments
- Visit workshops & Provide feedback – “tricks of the trade”



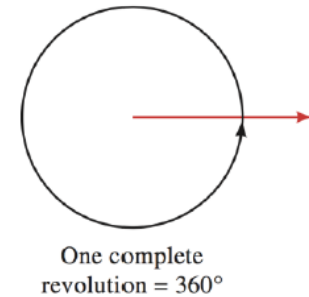
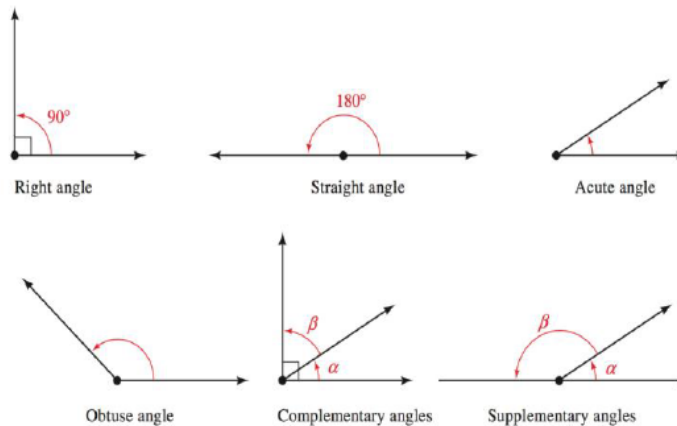
Math Handouts



Trigonometry Refresher Part 1 - Angles & the Unit Circle -

1) Angle Measurement

➤ Types of angles:

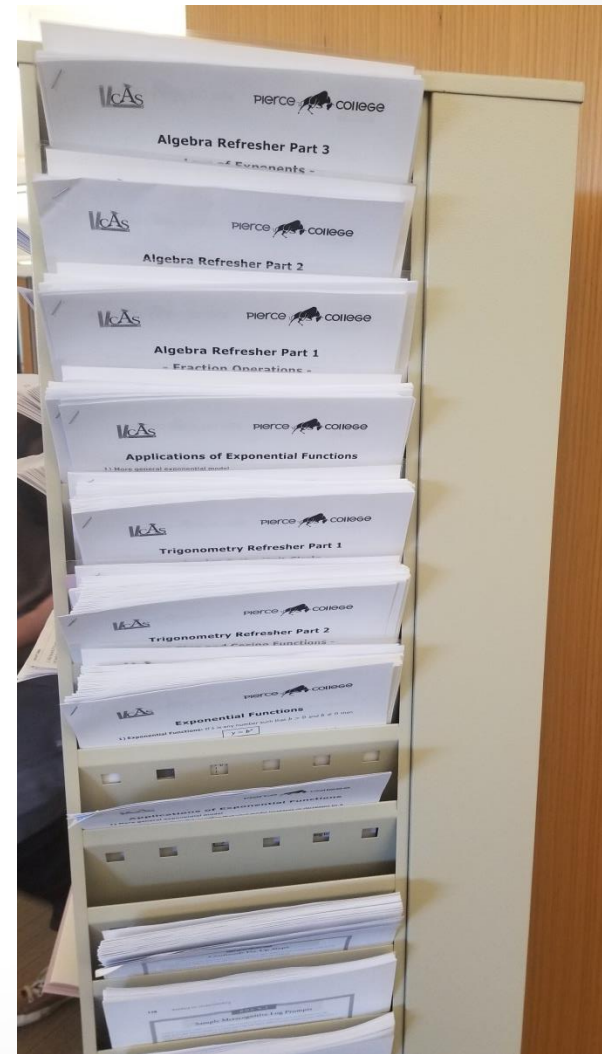


$$1^\circ = 60' \text{ or } 1' = \frac{1}{60}^\circ$$
$$1' = 60'' \text{ or } 1'' = \frac{1}{60}'$$

➤ Ex:

Math Handouts

- Summarize notes on key math topics presented in math workshops
- Feature more practice/sample problems and additional notes there wasn't enough time to address
- Available to everyone at all times – good workshop ads
- Used by tutors during tutoring sessions



Math Handouts

- Putting workshop presentations together = Writing lesson plans
- Improve tutoring by picking up on subject-specific roadblocks/topics students find confusing
- Helps organize future tutoring sessions and workshops better

Convert from decimal degrees to degrees and minutes	Convert from degrees and minutes to decimal degrees
$22.8^\circ \Rightarrow 0.8^\circ \frac{60'}{1^\circ} = 48' \rightarrow 22^\circ 48'$	$53^\circ 18' \Rightarrow 18' \cdot \frac{1^\circ}{60'} = 0.3^\circ \rightarrow 53.3^\circ$

➤ Practice problems:

1.1 Convert from degrees and minutes to decimal degrees:

a. $22^\circ 32'$ b. $214^\circ 17'$ c. $132^\circ 38'$ d. $-17^\circ 23'$ e. $75^\circ 26'$

1.2 Convert from decimal degrees to degrees and minutes:

a. 12.63° b. 37.72° c. 256.62° d. 42.17° e. 180.27°



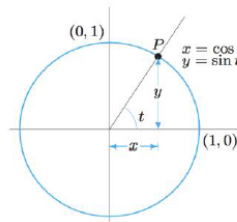
Math Handouts

- More resources for the center and to use in the classroom
- Collaboration helps develop tutors as future educators
- Expert blind spots wake-up call



1) The Sine and Cosine functions

In the figure below, an angle of t radians is measured counterclockwise starting at the point $(1, 0)$.



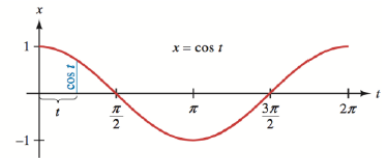
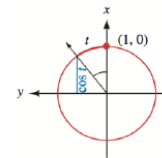
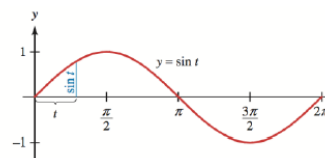
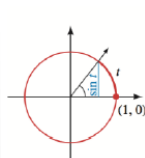
If P has coordinates x and y , we define:

$$\cos(t) = x$$

$$\sin(t) = y$$

$$\sin^2(t) + \cos^2(t) = 1 \quad \text{since } x^2 + y^2 = 1$$

As t increases and P moves around the circle, the values of $\sin(t)$ and $\cos(t)$ oscillate between -1 and 1 .



In-class tutoring-related activities

- Embedded tutors collaborate with math faculty in helping achieve peer learning and better success in a more interactive math classroom.
 - A “flipped” classroom
 - In-class group work
 - Test review days



In-class tutoring-related activities

- Already familiar with the curriculum, but now seeing another side of it
- Becoming aware of expert blind spots as a tutor = helps with planning/organizing tutoring session later
- Forming a bond with the students = increases participation/tutoring attendance
- Creates a professional relationship with the instructor = results in learning how to be an educator



In-class tutoring-related activities

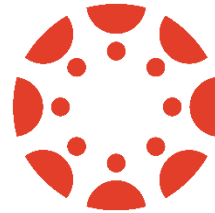
- An extra body in the room to help students
- Creates a sense of community in the classroom, stressing team work and togetherness as students bond with their tutor and instructor
- More feedback on students' progress from a reliable source



Virtual Tutoring

- Use of Canvas in tutoring

- Discussion boards
- Announcements
- Scheduling



canvas

- Use of facebook/social media in classroom

- Set-up or add-in to instructor's facebook group with their knowledge
- Homework help
- Polling



Virtual Tutoring

- My experience with Facebook groups
 - Instructor adds tutor = initial trust
 - Post announcements = keeping tutees updated
 - Poll students about my schedule (what days/hours are good) = optimizing my hours and reflecting on what works throughout the semester
 - Guide homework questions discussion = direct tutoring + success
 - Share resources (workshops, handouts, review sessions) = participation + attendance boost at CAS





Michelle Rivas

August 11, 2014

What am I doing wrong?

0.5 out of 1 (parts: 0.0.25, 0.25/0.25)

0.5 out of 1 (parts: 0.0.25, 0.25/0.25)

reattempt last question below, or select

possible solutions. Give your answers in increasing

$2x^2 - 3 = 4x$

possible solution is

possible solution is

Video eBook

able: 1

attempts.

st attempt: (0, 0.25, 0, 0.25), Score in gradebook: (0, 0.2

Like Comment

Seen by 19



Beck Shafiei same problem anyone figured it out ?

August 11, 2014 at 7:12pm · Like



Yiran Tong How did you input your answer ? Make note that -1 is smaller than -11/16...

August 12, 2014 at 1:08am · Like



Daniel Cervantes

November 20, 2013

Found a neat video with some examples for integrating algebraic fractions.

$\int \frac{1}{x^2+x+1} dx = \int \frac{1}{(x+\frac{1}{2})^2 + \frac{3}{4}} dx$

$x^2+x+1 = (x+\frac{1}{2})^2 + 1 = (x+\frac{1}{2})^2 + \frac{3}{4}$ **COMPLETING THE SQUARE**

Let $u = x + \frac{1}{2}$
 $du = \left(\frac{du}{dx}\right) dx = dx$

$\int \frac{1}{u^2 + \frac{3}{4}} du$ $a^2 = 3/4$
 $a = \sqrt{3}/2$

$\int \frac{1}{a^2+x^2} dx = \frac{1}{a} \tan^{-1}\left(\frac{x}{a}\right) + C$

16:52

Like · Comment

2 people like this.

Seen by 27



Write a comment...



Virtual Tutoring

- Benefits of “going virtual” = game-changer culturally
- Availability = no longer bound to **OFFICE** hours times.
- Team work emphasis = virtual show and tell
- Real-time notifications & posts = instant feedback



Tutor Training



Tutor Training

- 4 tutor training sessions per semester
- 3.5 hours each = 2 hours general session + 1.5 hours subject-specific breakouts, all focused around these four major topics:
 - 1. Basic Tutoring Techniques & Professional Norms
 - 2. Growth Mindset & Reading Apprenticeship
 - 3. Culturally Responsive Student Leadership (Conference)
 - 4. Habits of Mind
- Mandatory for all new tutors
- “Advanced” tutor training option

Tutor Training

- Relate general session topic to math tutoring (planning + practice!)
- Run activities in general session/facilitate entire math breakout = Public speaking
 - General session = 180+ tutors
 - Math breakout = 35-40 math tutors
- Meet with math liaison to plan breakout; with other tutor leaders and staff to plan general session activities, revise/update previous trainings, and discuss feedback = Lesson planning



Tutor Training

- Addresses “growing pains” – from 20 tutors to 180+
- Crucial to have students keep you in check – never fall in love with the “norm”
- Revisit teaching techniques
- Peer-to-peer learning



Tutor Mentoring



Tutor Mentoring

- 45-minute sessions facilitated by a tutor leader with 6-8 participating tutors per session;
- Not subject-specific; no faculty in the room
- New tutors must attend two sessions per semester; returning tutors come to one
- Discussion around outreach & collaboration; tutoring strategies; logistics; and reflections.
- NOT an extension of tutor training!



Tutor Mentoring

- Having different voices in the room helps build a community of practice and a friendlier work environment where tutors can freely seek help & communicate with one another
- Learn from others' experiences; share yours
- “I feel more confident and empowered troubleshooting challenges at work. I also understand better when to report things to my boss!” – Anonymous Math Tutor Leader



Tutor Mentoring

- Good to step back and not have faculty in room
- Better + Friendlier tutors/center = more tutees, hence more student success
- With a growing number of tutors, mentoring is key!



THANK YOU!

