

Archbishop Ryan High School Math Camp

Using the TI-83-84 to Solve Challenging Geometric Problems Involving Quadratic and Cubic Functions



Thursday, June 20 and Friday, June 21, 2019

9:00am - 11:00am

Math Department Sister Alice Hess's Classroom - NI02

Highly motivated 6-7-8th grade Math Students are invited to participate.

Participants need to bring their own TI 83-84. (Also sharp pencil, ruler, eraser)

Goal: Students will have fun using the TI-83-84 to solve challenging Geometric Problems. Knowledge of algebra / geometry is not necessary. You will be taught what you need to know. It is necessary that you enjoy a challenge and want to learn how to tackle it.

Some examples of problems that we will solve:

1. Maria has 25 feet of fencing with which to make a rectangular garden. She will use her house as one side of the garden and the fence for the other three sides. What dimensions should she use to make a garden with the largest area?
2. A 24 by 18 inch sheet is to be made into an open-topped box by cutting squares from the four corners of the sheet and bending the four remaining rectangular pieces up to form the sides of the box. These edges will then be bound together. How large should the four corners be cut so that the resulting box has the largest volume possible?
3. A cylinder is inscribed in a sphere with radius 5. Find the dimensions of the cylinder which maximizes the volume and then give the maximum volume.
4. A cone is inscribed in a sphere of radius 6. Find the dimensions of the cone which maximizes the volume and then give the maximum volume.

Cost: A donation of \$80 payable to Archbishop Ryan High School must be received by Friday, June 7.

Note from Sister Alice: This is a completely volunteer service on my part. If your child is highly motivated and you cannot afford \$80 at this time, then write a check for the amount that you can afford and say a prayer for my intentions when you attend church this Sunday. I do not want any deserving students denied this opportunity. Currently, I have some very highly motivated, but financially needy students in my Honors Trig/PreCalculus classes who work to help pay their tuition. I will put whatever amount you donate toward the tuition of one/two of these students.

They, in turn, will give service by tutoring their peers. This is a win-win situation for all involved.

Include your son/daughter's name and grade school with the check and address envelope to:

Sister Alice Hess, IHM

Archbishop Ryan High School

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