CONIC SECTIONS PROJECT

You and your teammates are members of a marketing team for TI. You were hired to create a marketing campaign for a new TI-calculator. In order to keep your job, your campaign needs to have the following components:

- A name for the new calculator and description of its features and improvements from the TI-84
- Estimated production cost and sale price with a mathematical model showing how many calculators you will need to sell to make a profit
- An graph demonstration from each member that fits a common theme
- A filmed video advertisement (30-90 sec) promoting the new calculator

You will present your advertisements and plan on Monday, April 11

RUBRIC

This will be a test grade on the last 6 weeks and will be based on the following rubric:

Group Component- 40 points

- Marketing plan includes name, description, and cost model..... 10 points
- Advertisement is ready to view on April 11..... 10 points
- Quality of presentation and advertisement ..... 20 points
- Creativity.....10 points

Individual Component-60 points

- Graph on Desmos is on time, high quality, includes all conic sections, and fits theme..... 20 points
- Conic sections on paper are graphed accurately..... 10 points
- Intersection is correct and all work is shown..... 10 points
- One page typed reflection ..... 10 points

CALENDAR FOR CONIC SECTIONS UNIT

Thursday, March 31 – Conics Review, Project Intro, watch hyperbolas & parabolas video
Friday, April 1- Hyperbolas and Parabolas, identifying conic sections video
Monday, April 4- Identifying Conic Sections, 5th six weeks notebook check
Tuesday, April 5- Work day in computer lab (C212)
Wednesday, April 6- Work day
Thursday, April 7- Work day
Friday, April 8- Work day
Monday, April 11- Presentations & final individual parts due

DETAILS FOR PROJECT COMPONENTS

Presentation:

Your presentation should include the name of your calculator, a description of it and its features, your cost estimates, and your plan for sales. You also will show your advertisement at this time. All team members need to speak during your presentation and you will need some visual aide in addition to your video.

Estimated Costs:

Try to make this as realistic as you can, but you are estimating these costs. Think about what fixed costs will occur no matter how many calculators are produced and what variable costs there are based on the number of calculators produced. You'll need to list the costs you come up with and include your estimate for the price. Come up with an equation that shows what your total cost will be based on the number of calculators you sell.

Plan for Sales:

How are you going to sell these? What's your audience? How much will you charge? How long will it take to make a profit? What else can you think of that is part of your plan to make a profit?

Online Graphs:

To show the calculator's graphing capabilities, you will create a graph using a program online called Desmos. On this website, each group member will create a drawing that uses each conic section (parabola, circle, ellipse and hyperbola). Since conic sections occur in so many places, your group will need to have a theme that each drawing fits (stuff is not a theme…). You may include other equations, but use of each conic section must be clear. You also may restrict the domain for any of your equations. You will submit your graph by sharing the link and emailing it to svkorotkow@g.risd.org

Drawing Graphs:

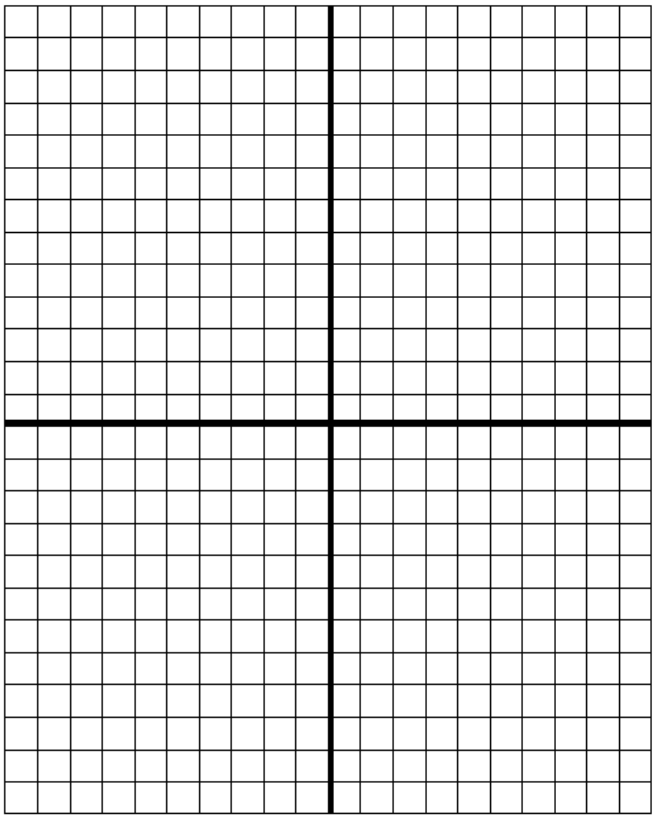
On the given graph paper, you need to accurately sketch your parabola, circle, ellipse and hyperbola equations (if there is more than one in your picture, you only need to sketch one of them on graph paper). On the back of those graphs, you also must algebraically show the work for the intersection of one set of the two given equations. I will assign you a number in your group for which set to work.

Applications Paper:

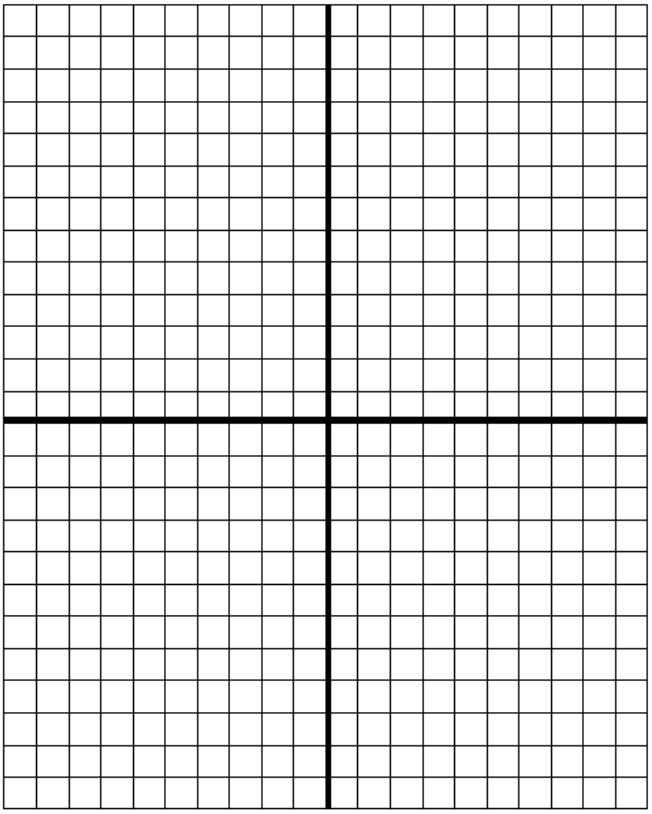
You need to type a one page, double-spaced paper about conics. The majority of this should be about how conic sections come up in the real world, and why they are needed.

Name: _____

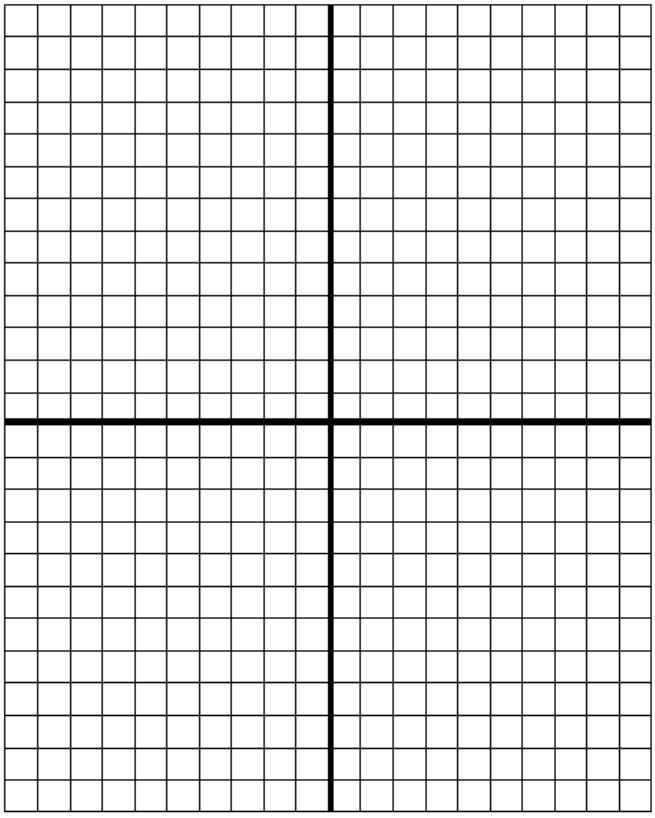
Circle Equation:_____



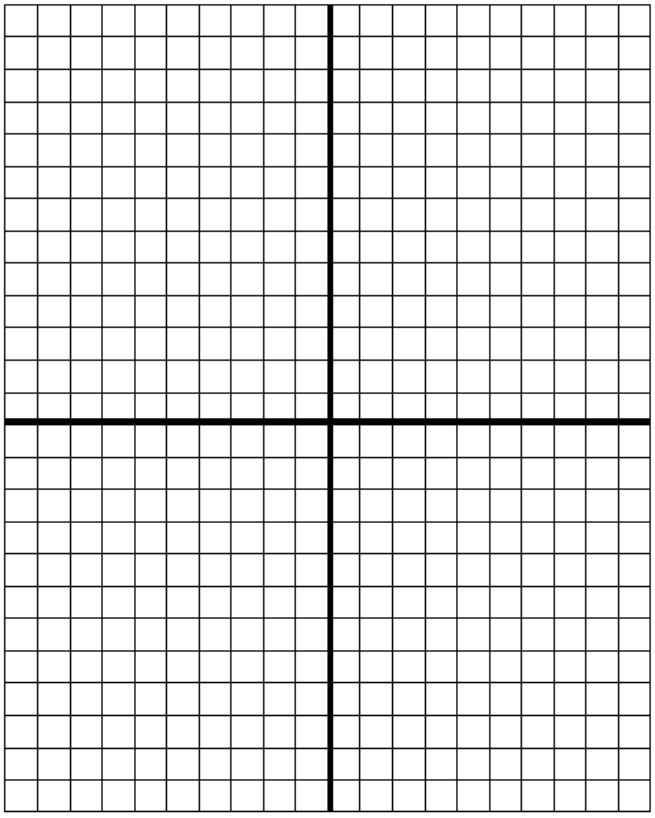
Ellipse Equation:_____



Parabola Equation:_____



Hyperbola Equation:_____



Find the intersection of one of the following sets of conic sections algebraically. Find the exact intersection using fractions and square roots if needed and not a decimal value. You may check your answer graphically, but you must show all the algebraic work. I will assign you a number in class and that is the set of equations you will work with.

<u>Group Member #1</u>: Ellipse $\frac{x^2}{2}+\frac{y^2}{3}=1$ and Parabola $x=y^2-2$

<u>Group Member #2:</u> Circle $x^2+y^2=12$ and Hyperbola $\frac{x^2}{1}-\frac{y^2}{5}=1$

<u>Group Member #3:</u> Hyperbola $\frac{x^2}{1}-\frac{y^2}{5}=1$ and Parabola $x=y^2-2$

<u>Group Member #4:</u> Parabola $x=y^2-2$ and Parabola $y=x^2+x-3$

<u>Group Member #5:</u> Circle $x^2+y^2=12$ and Parabola $x=y^2-2$

Name: _____Team Members or Team Name: _____

Conics Project Rubric (Test Grade)

	Grading Components	Points Possible	Points Earned
Group Component	Marketing Plan – includes name, description, and cost model	**10**	
	Advertisement ready to view	**10**	
	Quality of Presentation & Advertisement	**20**	
	Creativity	**10**	
Individual Component	Desmos Graph – on time, high quality, all conic sections, and fits theme	**20**	
	Paper Graph – conics are graphed accurately	**10**	
	Intersection found with work shown	**10**	
	Reflection – one page, typed, with valuable insight	**10**	
	Total	**100**	

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