

## Precalculus Investments Convention

In chapter 7 we have discussed investments and how exponential growth through compound interest can be applied, but the truth is there is much more to be learned. To help us get a deeper understanding of the power of exponential growth and decay we will be sponsoring a "Precalculus Investment Convention," or PIC. The PIC convention will be hosted by WLHS Precalculus students and will take place over three consecutive days. The topics presented, listed below, will answer several questions about investing and the math involved. Light refreshment and snacks will be served by the presenters.

### **The Four Areas of Investment**

- Money, Inflation, Taxes and Tithing (Day 1)
- Paying for College and Career (Day 1)
- Investments and Saving (Day 2)
- Retirement Investments (Day 2)
- Bad Debt and Credit Cards (Day 3)
- Good Debt and Mortgages (Day 3)

### **Convention to do list...**

- Assign 6 groups of 4-5 students
- Pick project managers. This is the person who will help lead discussion and organize the team.
- Each group must come up with a 15 minute presentation on their topic; this will include a power point or prezzi ([www.prezi.com](http://www.prezi.com)) and handouts.
- Assign each person a research responsibility (question(s) to answer).
- Assign tasks, like creating power point, handouts, etc.
- Designate due dates so that information can be prepared
- Exchange contact information, email, phone numbers, etc, so communication can take place.
- Go online (<http://gottschalk.wiscomathematics.com>) to find group worksheet and complete, turn in on day group presents.
- Light refreshments should be provided by the groups presenting on each day.

### **Presentations need to include the following...**

- The presentation should give a brief overview of the most practical information but also needs to include a brief explanation of the math involved in the topic.
- Presenters should look professional.
- Power point (prezi) should be well made.
- Questions that you may want to answer during your presentations include the following (Note: Not all questions need to be answered and others can be added)
- After your presentation be prepared to answer questions.
- It is encouraged, but not mandatory that all group participants present; however, all must be involved in the process.
- Each group should make a handout for the class. The handout may be your power point, but it would be better if you create single page information sheet, detailing the most important information you are presenting. Please make enough copies for the entire class.
- Refreshment should be provided. The groups should collaborate and decide what kinds of refreshments will be brought for the attendees (students). Do not get to crazy. Chips, candy, baked goods, soda, water, or juice would be fine. Please also provide cups, plate and napkins if needed.

## Topic List and Questions

### **Money, Inflation, Taxes and Tithing (Worksheet: Bad Debt)**

What is money? Why is it important? What is it used for? What is inflation? How does it affect money? (math) What are taxes? What are taxes used for? How do taxes affect the amount of money people have? (math) How do taxes effect investment? (math) What does our Lord say about money and investment? Is money evil? What is tithing? Should a Christian tithe? Does tithing have any tax advantages? If so, what are they?

### **Paying for college and Career (Worksheet: Good Debt)**

How does one pay for college? How does the college find out how much financial aid to give each student? (math) What kind of student loans can one get? What are the costs involved when comparing a private, public and community colleges? (math) How much does an average student get in educational loans at the various colleges? (math) How are they paid back and at what interest rate? (math) Is an education student loan a good investment? Why and Why not? (math)

### **Investments and Savings (Worksheet: Investments)**

What is an investment? What is the difference between stocks, mutual funds, bond and saving accounts? How does an investment work? (math) What are the risks for different investments? What are some tips to start investing?

### **Investment for Retirement (Worksheet: Retirement)**

Why do people invest for retirement? When is a good time to start investing for retirement? Why? (math) Why should I as a high school student start thinking about retirement? (math) What is the difference between pensions, 401k, 403b, IRA and Roth accounts? How do these investments work? (math) What investment is best for retirement? Why?

### **Bad Debt and Credit Cards (Worksheet: Bad Debt)**

What is debt? What is credit? How does credit work? (math) What is considered bad debt? Explain. Why is credit card debt known as bad debt? (math) What are other types of bad debt (car loans, pay day loans, etc)? Explain.

### **Good Debt and Home Mortgages (Worksheet: Good Debt)**

What is a home mortgage? What kinds of mortgages are there? Why is a home mortgage considered good debt? How does a mortgage work? (math) Is a home mortgage a good investment (pros and cons)? Explain. Is there a mortgage crisis in America? Explain. (math)

Dates: Nov16 Assign Groups and Task

Nov 22 Collaboration Day

Nov 23 Stewards Lab

Nov 29 Chapter 7 Test

Nov 30 Convention Day 1 (turn in WS)

Dec 1 Convention Day 2 (turn in WS)

Dec 2 Convention Day 3 (turn in WS)

Dec 6 Reflection Papers are due

**Graded Items:** 200 pts project/take home test grade (30% of overall grade)

**Reflection Paper: 100 pts (Paper is due 2 school days after the last presentation)**

- Each person in the group needs to write their own reflection paper.
- Reflection: Needs to include what you researched and what was learned through your individual research on the topic. You may include information that was not presented. **6 x 5 = 30pts**
- Reflection: Needs to include your group responsibility and how you helped your group in putting together the presentation. **3 x 5 = 15pts**
- Reflection: Need to include an analysis of what you thought your group did well and not so well during your preparation and presentation. **2 x 5 = 10pts**
- Reflection:
  - 1) Need to indicate at least 2 useful things you learned from the other presenters?
  - 2) Need to indicate what your favorite presentation (s) of the convention was and why. **5 x 5 = 25pts**
- Reflection: Would you recommend doing this in the future? Why? **2 x 5 = 10pts**
- Reflection: Needs to include a Bibliography correctly formatted and includes at least 4 sources, correctly formatted. **2 x 5 = 10pts**
- Deductions for grammar or punctuation and readability will be made for each category.

**Presentation Rubric: 100 pts**

You will be graded on a five point scale.

Scale: 5 excellent    4 good    3 average    2 poor    1 really bad

***Presentation (20 x 1= 20pts)***

Power point/Prezi Appearance

5    4    3    2    1

Presentation Format and Flow

5    4    3    2    1

Communication

5    4    3    2    1

Presenters Enthusiasm and Interest Stimulation

5    4    3    2    1

***Handout (10 x 2 = 20pts)***

Clarity of information written

5    4    3    2    1

Format and Appearance

5    4    3    2    1

***Information (5 x 4 = 20pts)***

Useful and practical

5    4    3    2    1

***Clarity of explanation of math involved (5 x 4 = 20pts)***

Clarity of math explained

5    4    3    2    1

***Individual professional appearance (5 x 1 = 5pts)***

5    4    3    2    1

***Refreshments (Did the groups provide refreshments?) (5 x 1= 5pts)***

5

***Time*** (minimum 10 min, maximum 18 min) -1 for each minute under or over

### Reflection Paper Rubric

Score	Research Summary	Responsibility Summary	Analysis of Preparation & Presentation	Two Things Learned and Favorite Presentation	Recommended	Bibliography (4 sources)	
5	Well done; detailed; explained well	Well done; detailed; explained well	Well done; detailed; explained well	Well done; detailed; explained well	Well done; no grammatical mistakes	Done; formatted correctly	
4	Okay; may need some clarification ; some grammatical mistakes	Okay; may need some clarification; some grammatical mistakes	Okay; may need some clarification; some grammatical mistakes	Okay; may need some clarification; some grammatical mistakes	Okay; some grammatical mistakes	Done; few formatting errors	
3	Not clear; vague; hard to follow; several grammatical mistakes	Not clear; vague; hard to follow; several grammatical mistakes	Not clear; vague; hard to follow; several grammatical mistakes	Not clear; vague; hard to follow; several grammatical mistakes; missing favorite presentation or only list one useful thing	Not clear; several grammar mistakes	Done; not formatted at all; missing one source	
2	Very Poor; grade school	Very Poor; grade school	Very Poor; grade school	Very Poor; missing two of the three criteria; grade school	Very Poor; grade school	Missing two sources	
1	Horrible	Horrible	Horrible	Horrible	Horrible	Horrible; missing three sources	
0	Not done	Not done	Not done	Not done	Not done	Not done	
	6 x	3 x	2 x	5 x	2 x	2 x	
	30/	15/	10/	25/	10/	10/	100/