Day 1, Lesson 1 – Quadratics: Quadratic Relations

The following table outlines how you can accumulate points towards your portfolio from lesson 1

Final date for this Lesson work to be submitted is **Monday, October 8**

Layer	Task	Task Notes	Points	Points Earned
HW Layer	Homework Completion	NONE (YYEEEAAAAHHHHH!) Just complete the tasks! (I do have a practice sheet however if you wish)	0 points	
Common Tasks	Lesson Notes – We will work through these together in class and I will show you what I want and how I want it done.	I have 48 lego "blocks" with which to build a rectangular field. Investigate the relationship between area and the field length. I own an apartment building which has 1500 units, for which I charge $600 rent per month. At this rent, all units are occupied. I know that for every $25 rent increase, I will lose 30 tenants. Investigate the relationship between the number of increases and my total revenue	10 points	
	QR in Geometric Relationships – Area and Length	You have 144 lego "blocks" with which to build a rectangular field given various "constraints". Investigate the relationship between area and the field length. Show me your model and explain how it helps you to set up the problem and work through it.	10 points	
	QR in Geometry – Base & Area of Triangles	The base of the height of a triangle can vary, but together, their sum must always be 36 units. Investigate the relationship between area and the measure of the base. Show me your model and explain how it helps you to set up the problem and work through it.	10 points	
	QR in Economics #1	CD Shack is selling the latest release from the group The Quadratics. They know that they can sell 300 CDs per day at $12.00 each. If they raise the price 25 cents, they will make more revenue on each CD sold but will lose 5 sales per day. Investigate the relationship between revenue and price changes.	10 points	
	QR in Economics #2	Sid and Sally are marketing managers for competing shoe companies. They are comparing their respective annual profit equations in terms of number of shoes manufactured and sold. Sid's equation is $P = -4.5(n - 225)(n - 75)$. Sally's equation is $P = -6.75(n - 300)(n - 100)$. In each case, P is the profit (in thousands of dollars) and n is the number of pairs of shoes manufactured and sold (in thousands). Which person, Sid or Sally, will show the greatest profit? Show the steps of your solution.	10 points	

	QR in Number Patterns	Two numbers differ by 12. Investigate the relationship between the numbers and their product.	10 points
	QR in Physics – Ball Bounce	Perform a physics experiment which will involve and height and time relationship. See me for the equipment and the steps for the use thereof.	10 points
"C" Layer	Your work for each tasks includes the following:	a) model (for geometric investigation) which you have difficulty in explaining what the model demonstrates. b) a table of values with an inappropriate amount of data c) a scatter plot (either hand-drawn, EXCEL, GDC generated) d) appropriate regression equation and coefficient of correlation	15 points
"B" layer	Your work for each tasks includes the following	a) model (for geometric investigation) which is explained to me b) a table of values with an appropriate amount of data c) a scatter plot (either hand-drawn, EXCEL, GDC generated) d) appropriate regression equation and coefficient of correlation	25 points
"A" Layer	Your work for each tasks includes the following	a) model (for geometric investigation) which is explained to me b) a table of values with an appropriate amount of data c) a scatter plot (either hand-drawn, EXCEL, GDC generated) d) appropriate regression equation and coefficient of correlation	25 points
	Business & Quadratic Relations Task	Complete the Business & Quadratic Relations Task	10 points
	Solving Systems and Matrices	If you are given 3 ordered pairs, you can determine the equation of the quadratic equation $y = ax2 + bx + c$. Your textbook shows you how to do this algebraically (see Ex 1 on pg 44). BUT, you can also find the equation (the values of a,b,c) by the use of matrices. Find out how and report your findings to me.	5 points