IM1 Problem Set 32		
Task 1	**Task 2**	**DC**
Put solutions to problems from the previous Problem Set on the board	Discuss all problems and come to a consensus. Record solutions in your notebooks and present solutions.	DC

Problem Set 32	
32.1	Given the following three points of a triangle, D(-3,4), E(-1, -5) and F(5, 1). Use GEOGEBRA to a. graph the 3 points and draw the triangle; b. find the length as well as the slope of each segment. c. Determine what type of triangle this is. d. Mr. S wants you to add one more point to the diagram to make a parallelogram. Where will you add this new point?
32.2	There are two cylinders. The first is of radius 7 and height 4 and the second is of radius 6 and height 7. a. Which cylinder has the larger surface area? b. Which cylinder has the larger volume?
32.3	Use the substitution method to find the point where the lines $2x + 5y = -4$ and $x - 2y = 7$ intersect. Verify using your graphing calculator.
32.4	Reyan downloads music from a site that charges $9.95 per month plus $0.55 for each song. Joe has budgeted $40/month to spend on music downloads. a. If Reyan downloads 5 songs in January, how much of his budget has he spent? b. If Reyan decides to use only $30 in February, how many songs can he download? c. Determine the maximum number of songs that he can download per month. d. Write an equation that models the relationship between monthly charges and songs downloaded.
32.5	In a class of 24 students, 12 students play the piano, 13 students play the guitar and 4 students play neither instrument. a. Represent this information on a Venn diagram. b. A student is selected at random. Work out the probability that the student only plays the guitar.

32.6

The following data table shows the final marks for 10 students in IM1 and the average number of hours they studied math per week.

Hours per week	3	3	5	1	5	3	6	3	5	2
Final mark	75	81	68	62	88	83	90	77	89	60

a. Use your calculator to graph the scatter plot and determine the equation of the line of best fit.
b. Use your equation to predict the mark for a student who studies for 4 hours per week.
c. Predict the number of hours studied to get a final grade of 97%.
d. How confident are you about your (i) equation? (ii) answers to questions b and c, (iii) whether or not there is a relationship between hours studied and marks in IM1?

32.7

Given the partial sequences of 7, 3, -1, -5, -9, ……..,

a. determine what the pattern is
b. use your predicted pattern to find the 10th term in each sequence
c. How would you find the 100th term in this sequence?
d. Mr S notices that the pattern looks very linear, so he decides to write a linear equation to represent this sequence of numbers. What equation could Mr S use?
e. Now, determine the 1000th term of the sequence.

32.8

FIXIT Pool Repair Service charges $50 for a service call and $40/hour for labour. Oasis Pools charges $30 for a service call plus $45/hour for labour.

a. The cost of repairing your pool can be modeled by linear functions. Write linear functions that model the cost of service provided by each of the pool repair companies.
b. Hence or otherwise, find the number of hours for a repair job for which both companies would charge the same amount.