IM1 Problem Set 18		
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 18

18.1

Given the following:

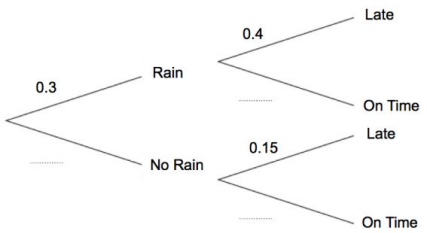
a. solve i.) $2x - 3(x + 4) = 2 - (x + 5)$ ii.) $\frac{4+x}{3} + 4 = \frac{x-6}{2} - 6$

b. evaluate: i.) $-\left(\frac{4}{5}\right)^2 + \left(-1\frac{2}{5}\right)^2$ ii.) $-2\frac{2}{3} + \left(-1\frac{3}{4} - \frac{5}{6}\right)^2$

18.2

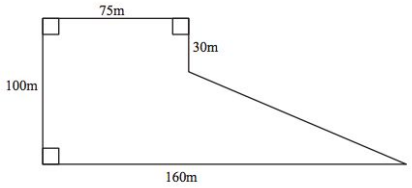
In a small village, one bus arrives a day. The probability of rain in the village is 0.3. If it rains, the probability of a bus being late is 0.4. If it does not rain, the probability of a bus being late is 0.15.

a. Complete the tree diagram.
b. How probable is it that the bus is on time?
c. How probable is it that the bus is late.
d. Work out the number of days the bus will be late over a period of 80 days.



18.3

The diagram shows the plan of a field. Fencing the field costs \$5 per meter and applying fertilizer to the field costs \$3 per square metre. Work out the total cost to fence and apply fertilizer to the field.

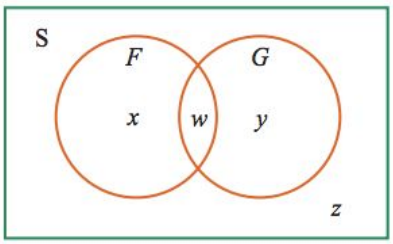


18.4

The table below shows the weight of an alligator at various times during a feeding trial.

Weeks	0	9	18	27	34	43	49
Weight (lbs.)	6	8.6	10	13.6	15	17.2	19.8

a. Make a scatterplot of this data using your calculator. Is a linear model appropriate? Explain.
b. What is the equation for the line of best fit?
c. What is the slope and describe what it means in context to this data.
d. Use the equation to predict the weight of this alligator at week 52.

18.5	Write equations for the lines defined as follows. Use slope-intercept form as well as standard form to write the equations. Then graph the functions on your TI-84 calculator and find where the lines intersect. a. The line that goes through the points A(-8,-3) and B(8,27) b. The line that has an x-intercept at (3,0) and a y-intercept at (0,-9).
18.6	Joanna is considering two job offers. Phoenix Fashions offers $1500/month plus 2.5% commission on her sales. Styles by Sally offers $1250/month plus 5.5% commission. a. Write an equation that can be used to model the monthly salary from Phoenix Fashions. b. Write an equation that can be used to model the monthly salary from Styles by Sally. c. Graph both equations on DESMOS and find the intersection point. d. Explain what the intersection point means. e. Which job should Joanna take? Why?
18.7	In a class of 30 students, 12 study French, 15 study German and 5 study both French and German. **a** Complete the Venn diagram representing this information, where F is the event 'studies French' and G is the event 'studies German' by finding the numbers w, x, y and z. **b** How many students: **i** do not study French? **ii** do not study German? **iii** study French or German or both? **iv** study French or German but not both? **v** study French but not German? **vi** study German but not French? **vii** do not study a language? **viii** study at least one language? **ix** study at most one language? 
18.8	Shown below are the scores 16 students received on a math quiz. 52, 60, 66, 66, 68, 72, 72, 73, 74, 75, 80, 82, 84, 91, 92, 98 a. What is the mean and the median of this data set? b. Find the range of the data set c. Determine the first quartile, d. Determine the the third quartile. e. Draw a box and whisker plot.