IM1 Problem Set 15 - Daily Tasks

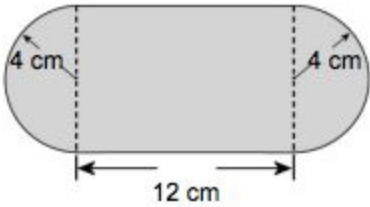| Task 1	Task 2	DC
Put solutions to problems from the previous Problem Set on the board	Discuss all problems and come to a consensus. Record solutions in your notebooks and present solutions.	DC

Problem Set 15

15.1	Determine the equation of the line that passes through A(5,-2) and B(-1,-6). Write the equation in all three forms.
15.2	Mr Santowski has a summer cottage for which he paid $120,000. Each year, the value of the house increases by $8,000. a. When will my cottage be worth $200,000 b. What will be the value of the cottage in 4 years time? c. When will the value of my cottage be double its original value? d. At what rate is the value of cottage changing from year to year? e. Write an equation that models the relationship between the value of my cottage and the number of years that I have owned the cottage. f. What do the slope and *y*-intercept mean in this equation?
15.3	John works at a clothing store and his weekly salary is $300 and he earns 5% commission on his weekly sales. a. What will be John's earnings if he sells $6,525 worth of clothing? b. How much clothing will he have to sell if he wishes to have a weekly earnings of $700? c. John gets a raise in pay and now earns a base salary of $500, but his commission remains at 5% of total sales. Write a new equation and graph it on the grid. What is similar about the 2 graphs? What is different about the 2 graphs? d. John now gets a raise in pay. He stills earns a base salary of $300, but his commission is now 7.5% Write a new equation and graph it on the grid. What is similar about the 2 graphs? What is different about the 2 graphs? e. John now gets promoted to Store Manager and earns a weekly salary of $1100. and graph it on the grid. What does this graph look like?
15.4	Determine the equation of the line that passes through A(3,-2) and has a slope of -2. Write the equation in slope-intercept as well as slope-point form.

15.5	The amount of CO_2 (in ppm) in the air at the Mauna Loa Astronomical Observatory has been measured regularly since 1958. In 1972, the amount of CO_2 recorded was 327.45 ppm while in 2012, the amount was 389.78 ppm.
	a. Write an equation modeling the relationship between the amount of CO2 and the years since 1958. b. When will the CO_2 levels be at 600 ppm? c. What was the amount of CO_2 in the air in June of this year d. Interpret the meaning of the ordered pair (56,413) e. If I give you an additional data point, (in the year 2005, the measured amount was 379.78), will your equation change? Why? How?
15.6	Here is a data set, wherein Ms. Knox is investigating whether or not there is a predictable relationship between the average number of chirps that a cricket makes and the air temperature. a. Graph the data. b. Draw the line of best fit and determine the equation of your line of best fit. c. Is there a predictable relationship? Why or why not?

ave # of Chirps	20	16	19	18.4	17.1	15.5	14.7	17.1	15.4	16.2	15	16	17
Temp	88	71	93	84	80	75	70	82	70	83	80	81	83

15.7	Disha has 8 socks in a drawer. 5 of the socks are black. 3 of the socks are white. Disha takes out a sock at random, writes down its colour but does NOT put it back into the drawer. Then she takes out a second sock, at random, and writes down its colour. a. Complete a probability tree diagram. b. Work out the probability that the two socks are the same colour.
15.8	Determine the area and perimeter of the following shapes: a. b.

a.

4 cm   4 cm

12 cm

b.

7.5 cm

10 cm   5 cm