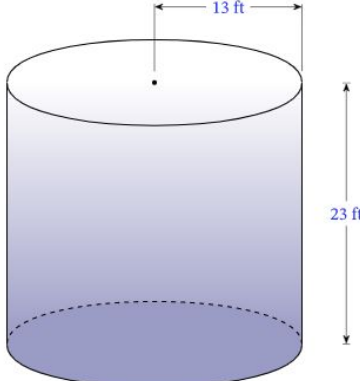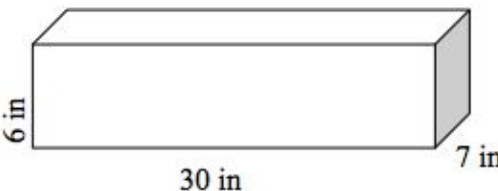| IM1 Problem Set 26		
Task 1	**Task 2**	**DC**
Put solutions to problems from the previous Problem Set on the board	Discuss all problems and come to a consensus. Record solutions in your notebooks and present solutions.	DC

Problem Set 26	
26.1	Given the following two points, find the slope of the segment joining the 2 points and the distance between the points and find the midpoint between the two points. a. P(2, 5) and Q(-4, 7) b. S(3, 6) and T(10, -2) Now go to the website https://www.geogebra.org/m/AafgtkrJ to check your answers, by graphing the points and using the animation to calculate the length and midpoints
26.2	Determine the volume and surface area of the following shapes: a. b.
26.3	Use algebraic methods to find the point at which the lines $y = -2x + 7$ and $y = x - 7$ intersect. Use a graphing calculator to verify this intersection point.

26.4	To sketch graphs of the following linear functions in standard form, we first find the x- and y-intercepts. Once we have the intercepts, we graph the intercepts and then the line.
	
	    a. Sketch a graph of the line $2x - 4y = 8$ by first finding the intercepts.
	    b. Sketch a graph of the line $4x + 3y = 24$ by first finding the intercepts.

26.5	A rocket is launched from a hill that is 700 m high. The rocket's altitude increases by 35m every 2 seconds.
	
	    a. Create a linear relation that models the rocket's upwards path.
	    b. Graph this relation.
	    c. Use your linear relation to predict the rocket's height at 50 seconds and 100 seconds.
	    d. Use your linear relation to determine how long it would take the rocket to reach a height of 1000m.

26.6	Niamh has a bag of cubes, of which 8 are blue and 4 are red. She takes one cube out and records its color. If the cube is red, she puts the cube back in and adds 2 more red cubes into the bag. If the cube is blue, she puts the cube back in and adds 2 more blue cubes.
	
	    a. How many cubes are in the bag for the first selection?
	    b. How many cubes are in the bag for the second selection?
	    c. Complete a tree diagram.
	    d. How likely is Niamh to select 2 red cubes?
	    e. How likely is Niamh to select 2 blue cubes?
	    f. How likely is Niamh to select 1 red cube and 1 blue cube?

26.7	Solve each equation below: a. $2x + 8 = 4x - 18$ b. $2(x - 2) = 3x - 14$ c. $\frac{4x-1}{4} + \frac{2x-1}{5} = 2$

26.8	Bill wants to earn extra money selling lemonade. It costs $40.00 so start his business and each glass of lemonade he sells costs him $0.60 to make. He plans on selling his lemonade for $1.25 a glass.
	
	    a. Write an equation that represents his costs.
	    b. Write an equation that represents his revenue.
	    c. Does Bill make a profit if he sells:
	       i. 20 glasses?
	       ii. 40 glasses?
	       iii. 80 glasses?
	    d. Graph both equations.
	    e. What does the intersection point mean?