IM1 Problem Set 25

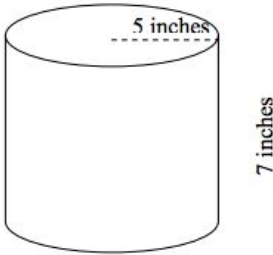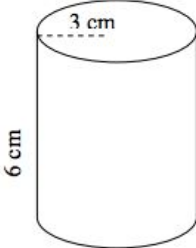| Task 1	Task 2	DC
Put solutions to problems from the previous Problem Set on the board	Discuss all problems and come to a consensus. Record solutions in your notebooks and present solutions.	DC

Problem Set 25

25.1 Graph the following two points, and then 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. A(-3,-4) and B(5,10)   b. C(-5,4) and D(4,22)   c. E(-1, -2) and F(6,-10)

25.2 Chris runs a window washing service. She charges a fixed fee of $5.00 plus $3 per window.

    a. How much will Chris earn if she washes 10 windows?
    b. How many windows did she wash if she earned $56?
    c. Which is the independent variable? The dependent variable?
    d. Write an equation for this relation.
    e. What is the value of the slope and what does it mean?

25.3 Determine the surface area and volume of the following cylinders

9) Volume = _____
   Surface Area = _____

10) Volume = _____
    Surface Area = _____

25.4 To help interpret the meaning of a slope in a word problem, we can use the **units** associated with the numbers and data points. Hence, determine the slope (also known as a rate of change) for the given points and contexts.

    a. The value of Mr S's house was $250,000 in 2000 and was valued at $400,000 in 2020.
    b. The maximum heart rate of a 20 year old athlete is 200 beats/minute while the maximum heart rate for a 90 year old athlete is 120 beats per minute..
    c. Maria earns $40 for delivering 50 newspapers every week, while she would earn $10 if she only delivered 10 newspapers every week.

25.5	A jar contains two white marbles and eight black marbles.
	
	  a. A marble is removed from the jar, its color is recorded and then put back in the jar. Then a second marble is selected.
	     i. What is the probability that both marbles selected will be white?
	     ii. What is the probability that one marble selected will be white?
	  b. A marble is removed from the jar, its color recorded and it is NOT returned. Then another marble is selected.
	     i. What is the probability that both marbles removed will be white?
	     ii. What is the probability that one marble selected will be white?

25.6	Amir earns $9/h working in a coffee shop and earns $11.25/h working in a grocery store. Last week, he earned $288.
	
	  a. Mr S writes the equation as $9x + 11.25y = 288$. What does x represent in this equation? What does y represent?
	  b. Graph this linear relation using (i) DESMOS and (ii) your graphing calculator.
	  c. Determine the x- and y-intercepts. What might they mean?
	  d. Determine 2 other points on the linear relation and explain what each point means.

25.7	Given the following partial sequences of numbers, determine what the pattern is and use your predicted pattern to find (i) the 10th term in each sequence and (ii) the preceding three terms,
	
	  a. …, 2, 5, 8, 11, 14, ………..
	  b. …, 3, -3, -9, -12, -15, ……….
	  c. …., -12, -7, -2, 3, 8, ……..

25.8	Calculate the following without using a calculator: a. $5\frac{1}{2} + 4\frac{2}{7}$ b. $4\frac{7}{12} \times 1\frac{4}{11}$