

IM1 Problem Set 20

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 20

20.1	<p>Solve the following equations:</p> <p>a. i.) $-5n - 8(1 + 7n) = -8$ ii.) $-3(x - 1) + 8(x - 3) = 6x + 7 - 5x$</p> <p>b. i.) $x + \frac{2}{3} = \frac{1}{4}x - 1$ ii.) $\frac{1}{4}x + x = -3 + \frac{1}{2}x$</p>
20.2	<p>The probability that Disha wins a game of chance is $\frac{2}{5}$. She plays 2 games.</p> <p>a. Complete the tree diagram below.</p> <p>b. Find the probability that:</p> <ol style="list-style-type: none"> i. she wins both games ii. she loses both games iii. she loses one game
20.3	<p>Find the area and perimeter of each of the compound shapes shown below</p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <p>a.</p> </div> <div style="text-align: center;"> <p>b.</p> </div> </div>
20.4	<p>Advance tickets for a local show sold for \$8 each. Tickets at the door for the same show sold for \$12 each. The revenue from the ticket sales was \$1120. Mr S writes the equation $8x + 12y = 1120$ to model this situation</p> <ol style="list-style-type: none"> a. Mr S checks his calculator and sees that (50,60) is a point in this linear relation. Explain what the point (50,60) means. Now, explain what the variable x represents and explain what the variable y represents. b. Write the equation in slope-intercept form and record 3 other ordered pairs from this relationship c. Does the graph have a y-intercept? Explain your reasoning.

20.5

The table below shows the sales for a flower company for the years 2007 through 2012.

- a. Graph the data on a scatter plot and draw a line of best fit for the data.
- b. Write an equation for the line of best fit for this data. Let x represent the years since 2007 and y represent the sales, in thousands of dollars.
- c. According to your equation, in what year will the sales reach about \$500 (in thousands)? Use mathematics to explain how you determined your answer.

Year	Sales (in thousands)
2007	\$305
2008	\$330
2009	\$345
2010	\$370
2011	\$395
2012	\$420

20.6

Use your TI-84 to find the point at which the lines $3x + 5y - 18 = 0$ and $2x + 3y - 12 = 0$ intersect. HINT: Change both equations into slope-intercept form.

20.7

A gym runs two fitness classes, a spinning class and a circuits class. On Saturday 100 people visited the gym. 18 people attended the spinning class. 10 people attended both classes. 56 people did not attend either class.

- a. Represent this information on a Venn diagram
- b. A person who attended the gym is selected at random. Find the probability that this person
 - i. attended only circuits
 - ii. attended exactly one class
 - iii. attended spinning, given that they attended circuits

20.8

The ages of the 15 employees of the Cool Curry House are given below.

16, 17, 17, 18, 19, 22, 25, 26, 29, 33, 33, 37, 40, 42, 44

- a. Determine the mean, mode, median and quartile values for this data set.
- b. Does the data set have an outlier? Why or why not?
- c. Create a box-and-whiskers diagram.