IM1 Problem Set 21

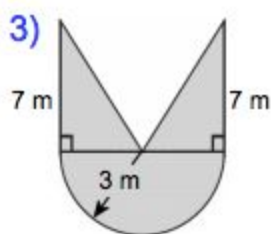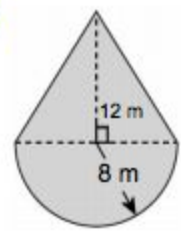| Task 1	Task 2	DC
Put solutions to problems from the previous Problem Set on the board	Discuss all problems and come to a consensus. Record solutions in your notebooks and present solutions.	DC

Problem Set 21

21.1

Solve the following equations:

a. i.) $-10n + 3(8 + 8n) = -6(n - 4)$ ii.) $-11 + 10(p + 10) = 4 - 5(2p + 11)$

b. i.) $\frac{7}{4}(b - 1) = \frac{7}{8}$ ii.) $\frac{2}{3}(3x + 1) = 5\frac{1}{3} - \frac{1}{3}x$

21.2

Elek has a bag of marbles. There are 6 red and 4 white marbles. Elek takes out a marble at random and records its colour. Without replacement, he takes out another marble, at random.

a. Complete a probability tree diagram.
b. Find the probability that the two marbles are the same colour.
c. Find the probability that Elek does not take a red marble.

21.3

Find the area and perimeter of each of the compound shapes shown below

3)
7 m   7 m
3 m
a.

4)
12 m
8 m
b.

21.4

Write equations for the following two lines and then graph both lines on your TI-84 to find the point at which they intersect. L_1 is the line that goes through (-6,-4) and is parallel to the line $y = 2x + 5$ and then L_2 is the line that goes through (-2,4) and is perpendicular to the line $y = 3x - 1$

21.5

Nadia has saved $160 and her sister Lucia has saved $340. They have just started part-time jobs. Each day that they work, Nadia adds $5 to her savings while Lucia adds $2.

a. Write 2 linear equations that model the amount of money each girl has as her savings as related to the number of days they work.
b. When will the girls have the same amount of money and what will that amount be?

21.6	The table shows the average and maximum longevity of various animals in captivity.

a. Draw a scatter plot and determine, what relationship, if any, exists in the data.
b. Draw a line of fit for a scatter plot, and write the slope-intercept equation for the line of fit.
c. Predict the maximum longevity for an animal with an average longevity of 33 years. Is this an example of Extrapolation or Interpolation?
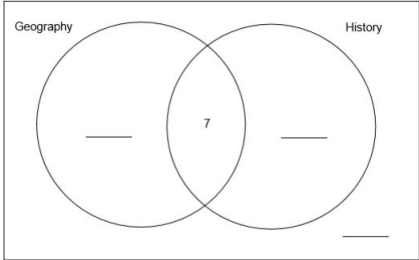
Longevity (years)								
Avg.	12	25	15	8	35	40	41	20
Max.	47	50	40	20	70	77	61	54

21.7 50 students are asked if they study Geography or History. The Venn diagram shows some information about their answers.

a. What does the number 7 on the diagram represent?
b. 20 students study Geography but not History. 19 students study History. Complete the Venn diagram.
c. How probable is it that a randomly selected student studies either History or Geography, but not both?

Geography   History

7

21.8 Reyan is a star basketball player for the CAC basketball team. The number of points scored by Reyan in each of his last 20 games are as follows:

35, 28, 25, 34, 41, 26, 19, 23, 32, 20, 11, 8, 38, 48, 22, 25, 16, 19, 22, 40

a. Complete the table to find the number in each interval.
b. Which interval contains the greatest frequency?
c. In what percent of these 20 games did Reyan score 30 or more points?
d. Construct a frequency histogram for points scored by Reyan in these 20 games.
e. In what interval does the median of this data set lie?
f. In what interval does the upper quartile of this data set lie?

Interval	Tally	Frequency
0 to 9		
10 to 19		
20 to 29		
30 to 39		
40 to 49		

Animal Longevity (Years)