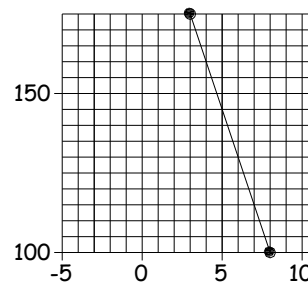


Mth 111 Lab #3 Franz Helfenstein NAME

This lab is intended to review some of the things we have done so far. You are encouraged to work together. As necessary, attach additional paper but put your final answer on this paper. Your work will be graded on completeness, neatness, accuracy and punctuality. You must show your work! (10 pts)

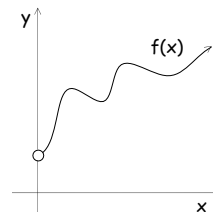
- 1) Use the indicated points to find the equation of the line in slope-intercept form. You must show your work for full credit.



2) Solve for x: $\frac{2x - 4}{3} + 5 = 12 - \frac{5x - 3}{2}$

3) Solve $(7 - 3x)(9 - 4x) = 10x + 38$

- 4) (a) Is $f(x)$ a function. Why/why not?



- (b) What is the domain of $f(x)$? (c) $f(0) =$

- 5) (a) Is $h(x)$ a function.

- (b) What is the domain of $h(x)$? (c) $h(2) =$

What x-value yields: (d) $h(x) = 6$ (e) $h(x) = 10$?

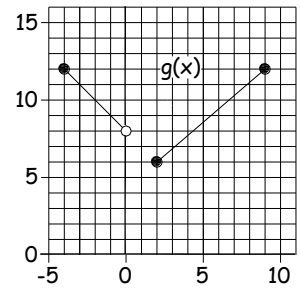
x	h(x)
9	6
6	-3
3	6
2	5
5	2
6	-3

- 6) $A = S(x)$ where x is a Social Security Number and A is the amount of tax that person owes this year.

- (a) Is $S(x)$ a function. Why/why not?

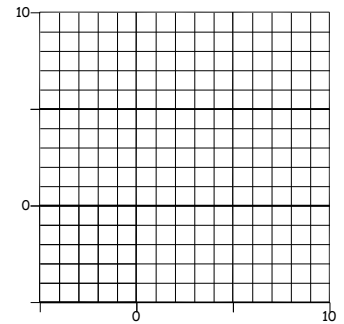
- (b) Describe the Domain of $S(x)$ in words. (c) Describe the Range of $S(x)$ in words.

- 7) (a) Is $g(x)$ a function. Why/why not?
 (b) What is the domain of $g(x)$? (c) When is $g(x) = 12$?
 (d) Write $g(x)$ as a piecewise function with domains restrictions.



- 8) Graph $f(x)$ and $f(x - 2) - 5$

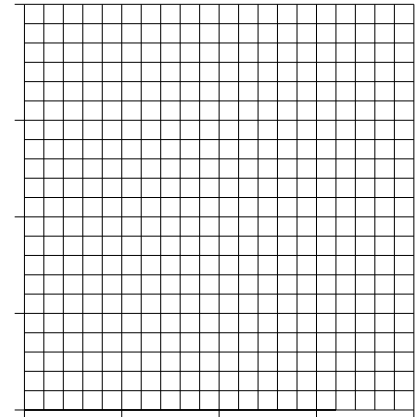
$$f(x) = \begin{cases} (1/4)x^2, & -4 < x \leq 0 \\ x + 5, & 0 < x < 5 \\ -x + 10, & 5 < x \leq 8 \end{cases}$$



Problems 9 - 10 refer to the data in the T-table which represents average tree diameter for similar aged trees at various elevations.

- 9a) What is the independent variable? 9b) Graph the data. Label the axes scales.

Elev. (ft)	Diam. (in)
2,600	33
2,800	31
3,000	25
3,200	22
3,400	19
3,600	18



- 9c) Use the TI to find the "best fit" regression line. Write it here.
- 10a) Use the TI's equation to predict timberline elevation.
- 10b) Use the TI's equation to predict the diameter of the trees at 2000 ft elevation.
- 10c) Use the TI's equation to predict tree diameter. at sea level
- 10d) Use the TI's equation to predict the elevation at which tree diameter will be 10".

BONUS

This data represents ground contamination vs. distance from a fueling station. Use this data and the TI's quadratic regression feature to determine the distance from the station where you expect the contamination to finally be zero.

Distance	25'	50'	75'
PPM	890	620	380
	ppm	ppm	ppm