

## Homework Problems

### Lecture 2

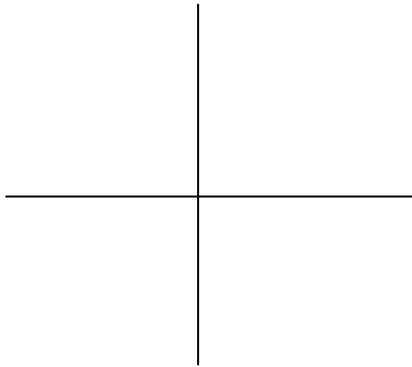
1. If  $a + 2 > 5$  and  $a - 4 < 1$ , what is a possible value for  $a$ ?
2. Draw a Cartesian coordinate system, labeling the axes. Place the following points on the graph.

A (0,5)

B(4,-6)

C(-2,0)

3. If  $\sqrt{x+8} = 5$ , what is the value of  $x$ ?
4. If 50 percent of 40 percent of a number is 22.8, what is the number?
5. If  $a^5 - 25 = a^5 - b$ , then  $b =$
6. Jo spends 25 percent of her monthly income on food, 30 percent on rent, 20 percent on insurance, and 10 percent on entertainment and miscellaneous expenses. Of her remaining income, she gives half to charity and saves the rest. If Jo saves 75 dollars every month, what is her total monthly income?
7. Graph the following equation.  $y + 2 = \frac{1}{2}x$



8. If  $c \neq 3$  and  $\frac{2c-5}{c-3} = 4$ , what is the value of  $c$ ?
9. In a certain building, there are 10 floors and the number of rooms on each floor is  $R$ . If each room has exactly  $C$  chairs, which of the following gives the total number of chairs in the building?
  - a)  $10R+C$
  - b)  $10R+10C$
  - c)  $10/(RC)$
  - d)  $10RC$
  - e)  $100RC$

10. Picture a graph comparing rate of industrialization and pollution levels. Would you expect the slope to be positive or negative? Explain.

11. If,  $\frac{x+y}{x-y} = 7$  what is the value of  $\frac{x}{y}$ ?

12. If  $7\sqrt{x} + 4 = 25$ , what is the value of  $x$ ?

13. Let's assume  $y$  indicates a person's life expectancy and  $x$  indicates the distance in miles from a city center, where  $y = \frac{x}{5} + 55$

- a. What is the slope? What does that mean in terms of the relationship between life expectancy and city living?
- b. What is the  $y$ -intercept? What does that mean for your life expectancy if you live right in the city?

14. Graph the equation  $4x+2y=0$ ; label the slope, axes and  $y$  intercept.

15. Solve the two equations below for  $x$  and  $y$  using substitution.

$$13x - 5y = -5$$

$$x + y = 1$$

16. Solve the two equations below for  $x$  and  $y$  using combination.

$$x + 2y = 1$$

$$5x + 3y = 26$$

17. Solve the two equations below using the method of your choice.

$$2x + 3y = 9$$

$$5x + y = 17$$