

Name: \_\_\_\_\_  
Date: \_\_\_\_\_  
Class: \_\_\_\_\_

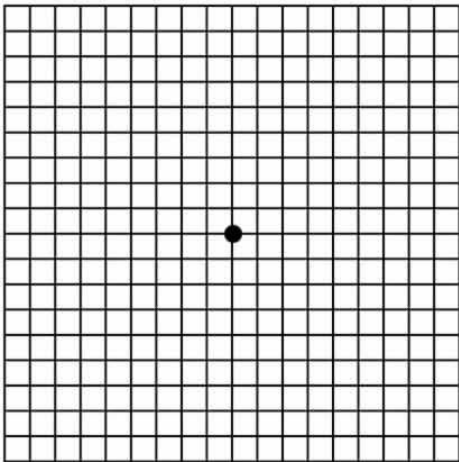
Algebra  
Unit 5  
PS

**\*\*Remember, this assignment is 15 points of your 100 point test grade. You can have this assignment checked as many times as you wish prior to the test. It is due at the beginning of class the day you take the test\*\***

1) [3] Explain if  $(-2, -1)$  is a solution to the system  $8x = 6y - 10$  and  $4x - 17 = 9y$ .

2) [3] Find the solution to the system  $6y = x - 13$  and  $2x + 3y = 11$

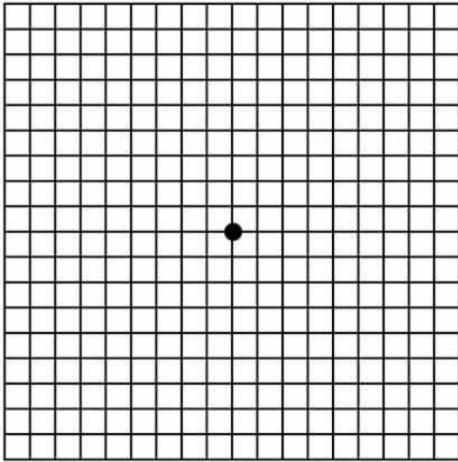
3) [3] Joe and Jim are both driving in their cars along the same route. Jim is driving 40 mph and has a 30 minute head start. Joe is driving 45 mph. How long after Joe starts driving will he catch up to Jim?



4) [3] Find the solution to the following system:  $5x = 3y + 15$  and  $6y = 10x + 12$

5) [4] Solve the following system:  $4x + 3y = 2$  and  $9y + 8x = 11$

6) [3] The following 2 lines intersect at  $y = 5$ :  $y = 6 - mx$  and  $y = 11 - 3x$ . What is the  $x$  coordinate where they intersect and what is the value of  $m$  that makes it true?

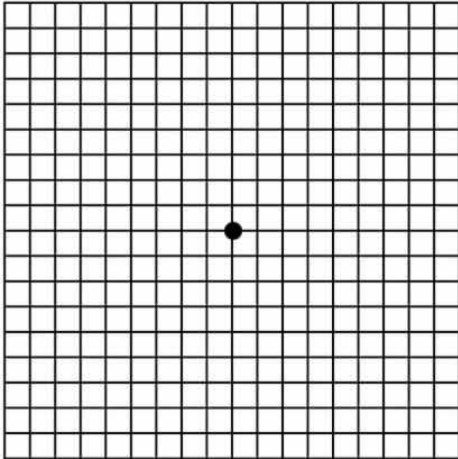


7) [4] Two families are seeing the same movie. Family A buys 2 adult and 3 child tickets which cost \$49 while family B buys 1 adult and 4 child tickets which costs \$44.50. How much would it cost for a family that includes 3 adults and 3 children to see the same movie?

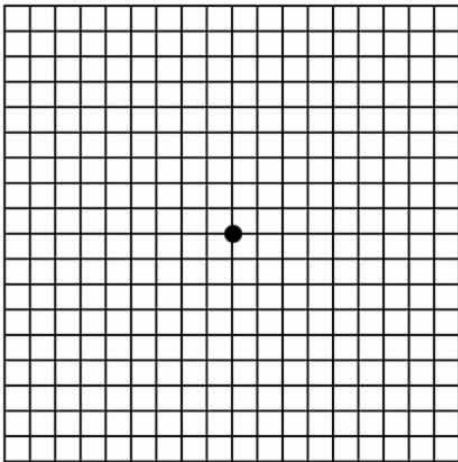
8) [4] Stacy has 2 jobs: waitress and UPS driver. One week she earns \$926 working 22 hours as a waitress and 26 hours as a UPS driver. The 2<sup>nd</sup> week she earns \$690 working 30 hours as a waitress and 10 hours as a UPS driver. How much does she earn at each job per hour?

9) [3] Solve the following system of equations:  $2x = 12 - 4y$  and  $8y = 24 - 4x$ .

10) [4] Solve the following equation using a graph:  $x^2 = 2 - x$



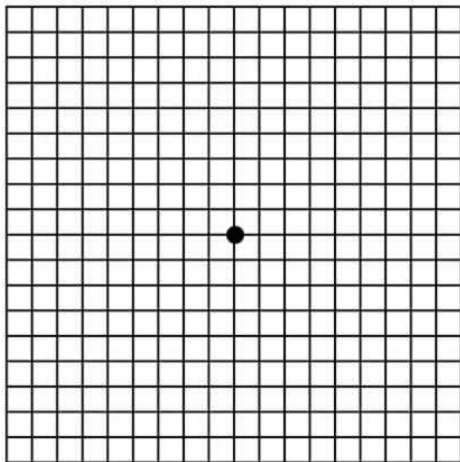
11) [4] Solve the following equation using a graph:  $|x - 2| = \frac{1}{3}x - 1$



12) [3] Graph the solution set for the following inequalities:

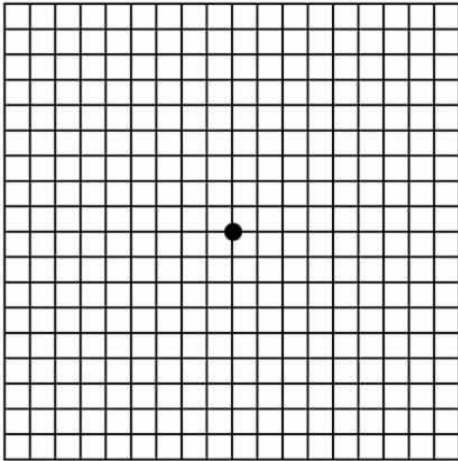
$$3y - 2x > 9$$

$$5x - 4y \geq 12$$



13) Graph the solution to the following inequalities:

$$y \leq 4$$
$$7x + 14y \geq 42$$



14) [4] A food company is creating a non-carb brownie in the following way. The brownie must not weigh at least 10 grams but must not have more than 100 calories. The brownie will be made of fat and protein. Fat has 9 calories per gram and protein has 4 calories per gram. Write and solve a system of inequalities that will model this situation. What is one combination of fat/protein that would solve this problem (and how many calories would each have?)