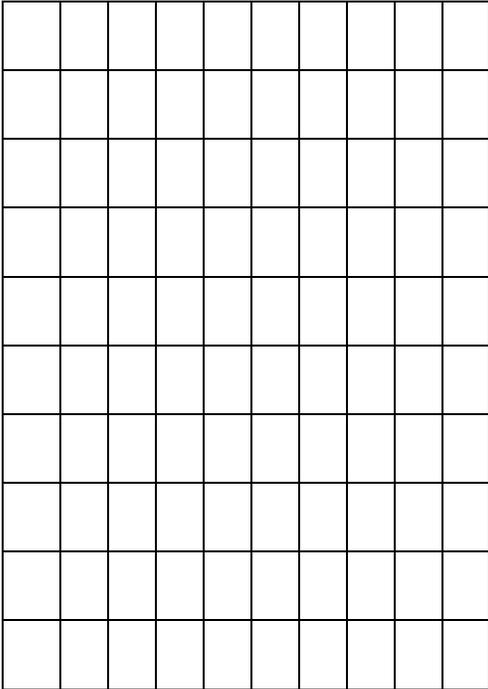


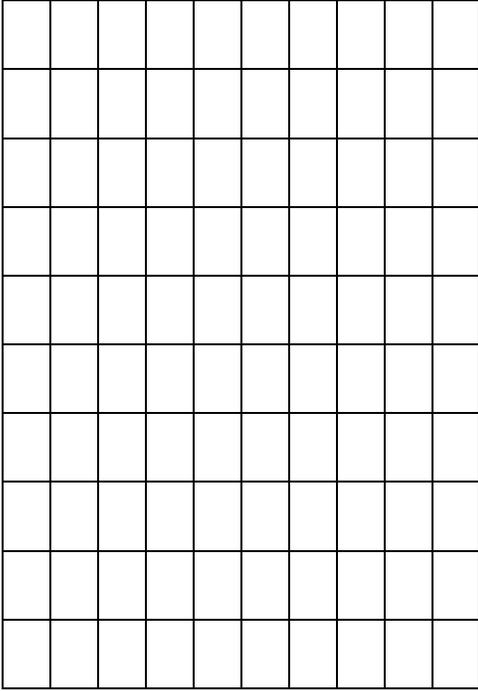
MATH 110 PRACTICE FINAL

#1. Graph by plotting points. $y = x$



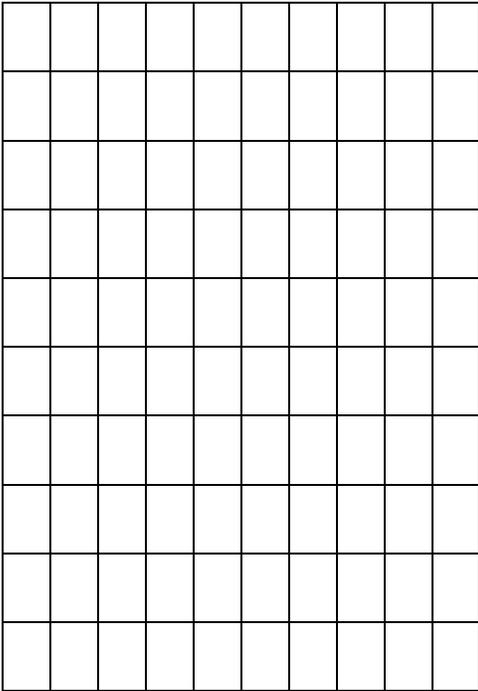
#2. If $f(x) = -3x^2 + 6x - 2$, find $f(-3)$

#3. Graph by intercepts. $2x + y = 4$

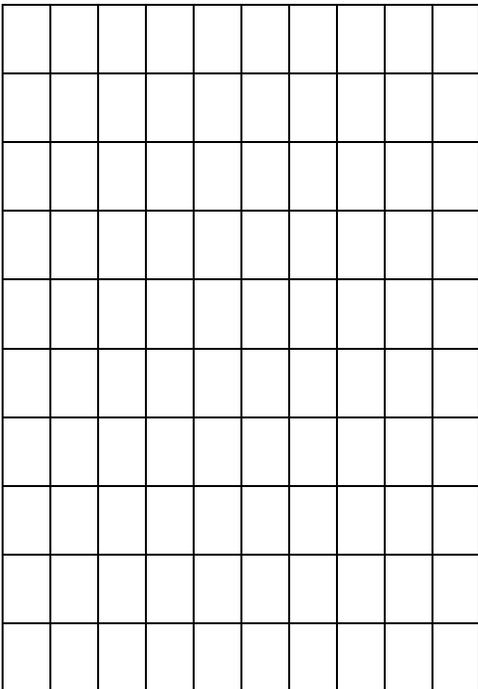


#4. Calculate the slope of the line passing through (5,3) and (4, -8). Indicate if the line rises, falls, is horizontal or is vertical.

#5. Graph by inspection. $y = \frac{3}{4}x - 4$

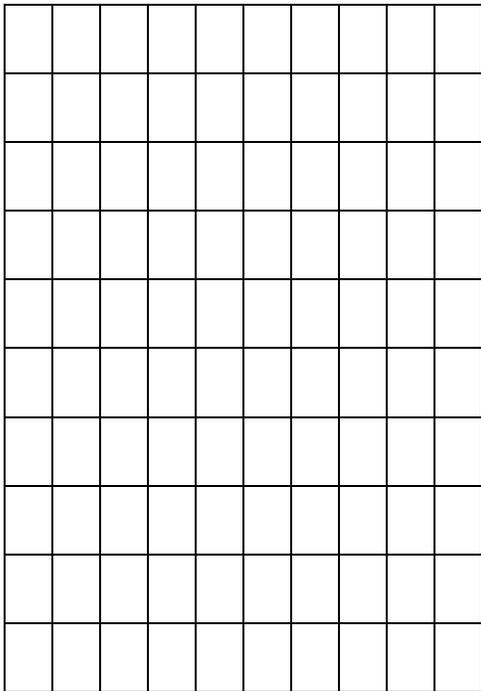


#6. Put the equation in slope intercept form, identify the slope and y intercept and graph $3x = 5y - 10$



#7. Solve the system by graphing

$$y = -x + 5 \quad 2x - y = 4$$



#8. Solve the system by substitution

$$x + 4y = 14 \quad 2x - y = 1$$

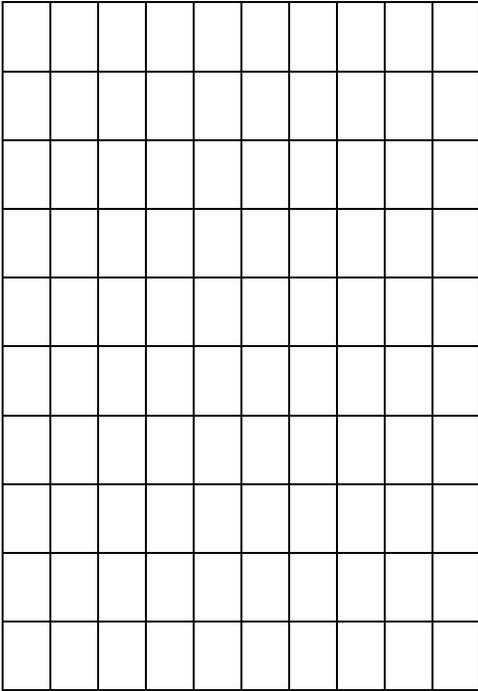
#9. Solve the system by the addition/elimination method

$$5x + 3y = 1$$

$$3x + 4y = -6$$

#10. If 20 pounds of rice and 10 pounds of potatoes cost \$16.20 and 30 pounds of rice and 12 pounds of potatoes cost \$23.04, how much does one pound of rice cost?

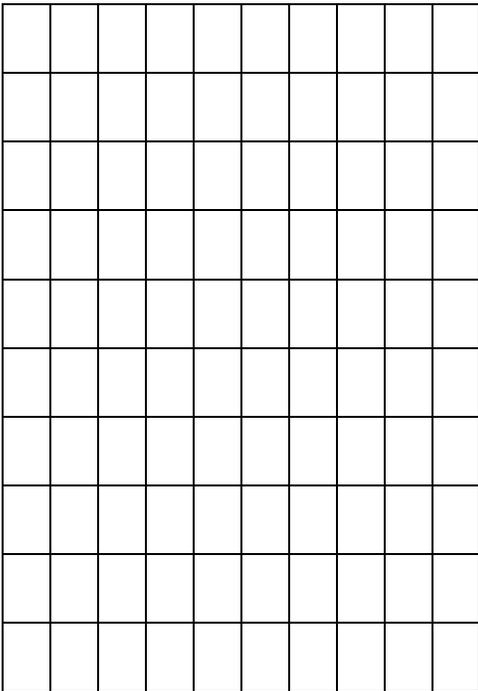
#11. Graph $2x + 3y \leq 12$



#12. Graph the system of inequalities

$$y > x - 4$$

$$y < -x + 4$$



#14. A state has a 6% sales tax. What is the sales tax on a microwave oven priced at \$360? And, what is the total cost of the oven?

#15. You borrow \$3,000 for four months at 10% simple interest. Find the amount of interest paid and the future value of the loan.

#16. Find the effective annual yield, to the nearest hundredth of a percent, of an account paying 4.8% compounded quarterly.

For problems #17 - #20: The cost of a new car is \$16,500. We can finance the purchase by paying \$500 down and \$350 per month for 60 months.

#17. Determine the amount financed.

#18. Determine the total installment price

#19. Determine the finance charge

#20. Determine the APR

For Problems #21- #22: Instead of making the 48th payment, the borrower decides to pay the remaining balance and terminate the loan for car referred to above.

#21. Use the actuarial method and determine how much interest is saved by repaying the loan early and the total amount due on the day of the loan's termination.

#22. Use the rule of 78 and determine how much interest is saved by repaying the loan early and the total amount due on the day of the loan's termination.

For Problems #23 - #27: The price of a home is \$120,000. The bank requires a 10% down payment and two points at the time of closing. The cost of the home is financed with a 30 year fixed rate mortgage at 8.5%.

#23. Find the required down payment.

#24. Find the amount of the mortgage.

#25. How much must be paid for two points at closing?

#26. What is monthly payment (excluding escrowed taxes and insurance)

#27. Find the total cost of interest over 30 years.

For Problems #28 - #30: A credit card has a monthly rate of 1.8%. In the March 1 – March 31 itemized billing, the March 1 unpaid balance is \$3600. A payment of \$2000 was received in March 6. There are no purchases or cash advances in this billing period. The payment due date is April 9. Find the interest due on this date using

#28. The unpaid balance method

#29. The previous balance method

#30. The average daily balance method.

#31. What is the volume of a rectangular storage facility that is 75 feet tall, 80 feet wide and 15 feet long?

#34. The hour hand of a clock moves from 12 to 8 o'clock. Through how many degrees does it move?

#35. A surveyor measured a triangular plot of ground, measuring the three angles as 35.1° , 70.6° and 73° . Are these measurements correct? If not, how much of an error is there?

#36. If you drive 9 miles south, then make a left turn and drive 12 miles east, how far are you, in a straight line, from your starting point?

#37. How much fencing is required to enclose a circular garden whose diameter is 224m?

#38. Two cylindrical cans for beef stew sell for the same price. One can has a diameter of 8 inches and a height of 4 inches. The other has a diameter of 6 inches and a height of 7 inches. Which can contains more stew and is, therefore, a better buy?

#39. Find the sum of the measures of the angles of a 7-sided polygon.

#40. What will it cost to tile a rectangular floor measuring 241 feet by 70 feet if the tile costs \$14 per square foot?

#41. What angle equals its own complement? What angle equals its own supplement?

#42. What is the surface area of a rectangular solid with height 2 m, length 7m and width 4m?

#43. A flagpole casts a shadow of 36 feet. Nearby, a 5 foot tree casts a shadow of 2 feet. What is the height of the flagpole?

#44. A new pyramid has been found in South America. The pyramid has a rectangular base that measures 93 yards by 180 yards and has a height of 100 yards. The pyramid is not hollow like the Egyptian pyramids and is composed of layer after layer of cut stone. The stone weighs 432 lb per cubic yard. How many pounds does the pyramid weigh?

#45. A designer wants to add a wallpaper border to a rectangular room whose dimensions are 18 feet by 16 feet. If the border costs \$12.560 per roll, and there are 12 feet of paper on a roll, how much will the border cost? Assume that the designer cannot buy a fractional part of a roll.

#46. What will it cost to make a circular skirt with a diameter of 2.5 yards if the material costs \$6.25 per square yard? Round your answer to the nearest dollar.

#47. A flowerbed is in the shape of a parallelogram. A gardener wants to cover the bed with a weed barrier that costs \$1.29 per square foot. How much will it cost to cover the flowerbed with the weed barrier, if the height of the bed measures 4 feet, and the base measures 10 feet? Round your answer to the nearest dollar.

#48. If \$2000 is invested into an IRA and the interest rate is 9% per year, find the value of the IRA in 35 years.

#49. To the nearest dollar, how much money must be invested when you are age 25 if you want to retire at age 65 with \$300,000? Assume the money earns 3.25% compounded quarterly.

#50. The price of a home is \$150,000. The bank requires a 20% down payment with 2 points at the time of closing. The cost of the home is financed with a 30 year, fixed rate mortgage at 8.5%. Find the total cost of interest over 30 years.