

Math 30 Final

1. Find the prime factorization of 240. (5 pts)

2. (5 pts) Divide.  $13 \overline{)949}$

3. Evaluate the expressions. (5 pts each)

a)  $651 \div 0$

b)  $(4)^2 - 2[7 - 8(-4)]$

c)  $3(t^3 + 4t) - (t^2 + 3t - 1)$

d)  $\left(\frac{4y^2}{x}\right)\left(\frac{3x^2}{16y^3}\right)$

e)  $(2x^2)(3x^3)^2$

f)  $-\frac{3}{9} + \frac{3}{6} + \frac{7}{3}$

g)  $(x - 5)(3x^2 + 2x + 4)$

h)  $-6 - (-0.55)$

4. (6 pts) Perform the indicated operations by either writing all numbers in decimal form or writing all numbers in fraction form. Then circle the correct answer.

$\left(-\frac{7}{8}\right)(5.3 - 3.9)$

5. (6 pts each) Solve the following equations.

a)  $255 = x + 60$

b)  $7 + 4x = 5 - 2$

c)  $2 - (x - 4) = 36$

d)  $\frac{1}{5}y - \frac{2}{4} = \frac{1}{10}$

e)  $3.3x + 1.3 = 2.2x + 0.2$

f)  $\frac{3}{8} = \frac{x-3}{5}$

6. (6 pts) Evaluate this expression when  $x = -2$  and  $y = 4$ :  $-3y + x^2 + 5$

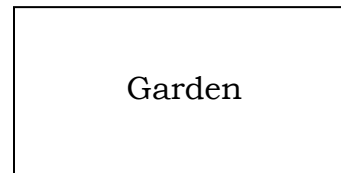
7. (5 pts) A Doctor earns **X dollars per year**. Express her salary **per day**. (365 days in a year)

8. (6 pts) a) describe the variable, b) *Form an equation*, and c) *then solve it to answer each question*.

A rectangular garden is being built. There is enough fertilizer to fill an perimeter of 288ft. The length must be twice the width. **What is the width of the Garden?**

$P = 2l + 2w$

a)  $x =$  \_\_\_\_\_



b)

c)

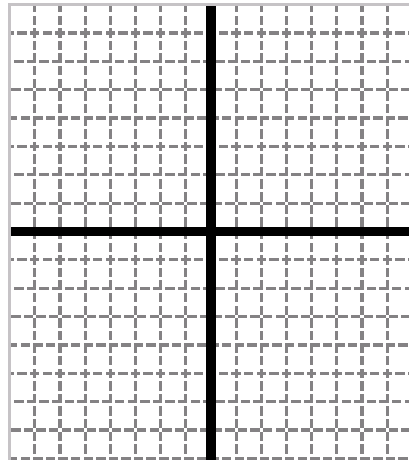
9. (5pts) Use the power of ten rules for the following. I need to see the loops.

10,000 ( 4.17 )

10. (6 pts each) Make a table and then graph the equation. Label all of the points on the graph.

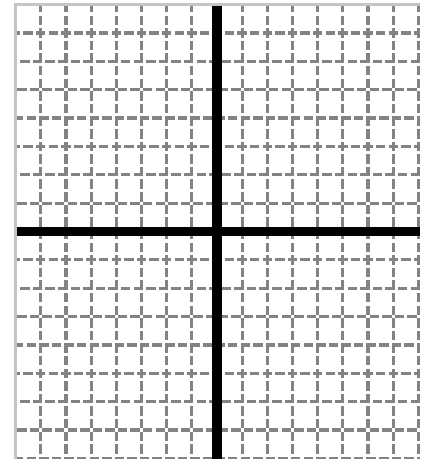
a)  $y = \frac{1}{2}x - 3$

x	y



b)  $y = x^2$

x	y



x-intercept= (      ,      )

y-intercept=(      ,      )

**CALCULATOR PORTION. YOU MAY NOW USE YOUR CALCULATOR. (make sure you show all operations)**

11. (5 pts each) Fill in the boxes.

decimal	fraction	percent
		4.5%

12. (6 pts) Of the 88 keys on a piano, 36 are black. What percentage of the keys are black?

13. (6 pts) Julie is a Financial advisor during the week days. Her daughter was just accepted to UCLA. Julie is now selling Lemon Aid on Saturdays as a supplemental income. She sells the lemon aid for \$1.50 for a glass. She is having a slow day and decides to sell the lemon aid for 25% off of the original price. How much is she selling the lemon aid for?

14. (6 pts) Danny is selling his used shoes on ebay at a 60% decrease in purchase price. What will he sell a set of three pair of shoes for if their costs were \$4.20, \$55.95, and \$105.00?

15. (6 pts) Compounded interest  $A = P\left(1 + \frac{r}{n}\right)^{nt}$ . After receiving an inheritance of \$100,000, you deposit it into a Annuity making 8% interest, compounded monthly. How much money will be in the account at the end of 10 years?

P=

A=

r=

t=

n=

16. (5 pts) a) Write 240 ft in 3 hours as a **unit rate**.

b) If part a) is the speed of racing snail, then how far will this snail travel in 5 hours and 30 minutes?

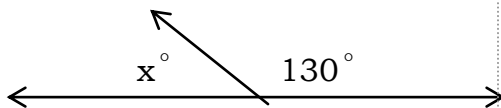
17. (6 pts) Comparison shopping. A 150-pound bag of almonds costs \$12.25, an 80-pound bag costs \$6.41, and a 15-pound bag costs \$1.26. Which is the better buy?

18. (6 pts) A 30lb dog can eat 3.5 cans of dog food in one week. How many cans of dog food can a 90lb dog eat?

19. (6 pts each) Perform each conversion.

a) 10 ounces = \_\_\_\_\_ pounds    b) 341.5 dm = \_\_\_\_\_ Km    c) 30 yards = \_\_\_\_\_ inches

20. (5 pts) Find x



1.  $2^4 \cdot 3 \cdot 5$
2. 73
3.
  - a. Undefined
  - b. -62
  - c.  $3t^3 - t^2 + 9t + 1$
  - d.  $\frac{3x}{4y}$
  - e.  $18x^8$
  - f.  $5/2$
  - g.  $3x^3 - 13x^2 - 6x - 20$
  - h. -5.45
4. -49/40 or -1.225
5. A) 195   b) -1   c) -30   d) 3   e) -1   f) 39/8
6. -3
7.  $x/365$
8. a)  $x =$  Width of the garden   b)  $x+2x+2x+x=288$    c) 48ft
9. 41,700
10. A) ask   x-int (6,0)   y-int (0,-3)
11. 0.045, 9/200
12. 40.9%, 41%
13. \$1.13
14. \$66.06
15. \$221,964.02
16. 80ft per hour, 440ft
17. 80 lb bag, not much of a difference, but it is the best buy
18. 10.5 cans
19. A) 0.625 pounds   b) 0.3415   c) 1080
20.  $X=50$