Math 930

Practice Final Exam

I. For problems 1-5, perform the indicated operations and simplify your answers. (2 points each)

1. $\frac{1}{12}-\frac{5}{8}$ 1._____

2. $\frac{7}{5}\div\left(-\frac{7}{5}\right)$ 2._____

3. $\frac{3(-4+9)-12}{6-3(-3)}$ **(Answer must be in reduced fraction form)** 3._____

4. $15+(-25+24)^3$ 4._____

5. $3(x+6)-(x-8)$ 5._____

II. For problems 6-7, evaluate the expressions for the values given. (**2 points each**)

6. $4x^2+5x-6$, given that $x=-2$ 6._____

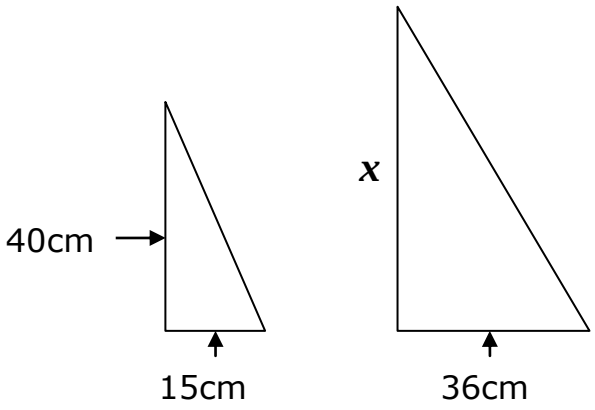
7. $12x - 3(-x+2) +y$, given that $x=3$ and $y=10$ 7._____

III. For problems 8-10 (3 points each).

8. 42 is 24% of what number? 8._____

9. Solve the following: $\frac{2x+1}{4}=\frac{3x}{8}$ 9._____

10. The two triangles below are similar. Find x. 10._____



IV. For problems 11-16, solve each equation. (**3 points each**)

11. $-4p + 11 = -3$ 11._____

12. $\frac{3}{5}h = 12$ 12._____

13. $(y - 1) + y = y + 1$ 13._____

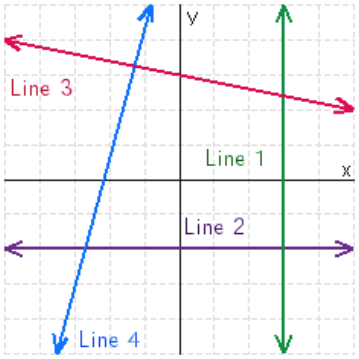
14. $\frac{6+2x}{-5} = x$ 14._____

15. Solve for d: $A = \frac{m + 2d}{3}$ 15. d = _____

16. Solve for b: $d = a + b + c$ 16. b = _____

V. Graphing

Given the sketch below, answer the following questions. (1 point each)



_____ 17a) Which line graphed has a negative slope?

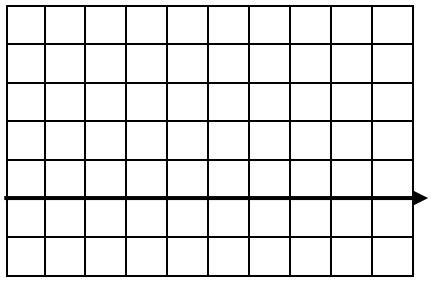
_____ 17b) Which line graphed has a zero slope?

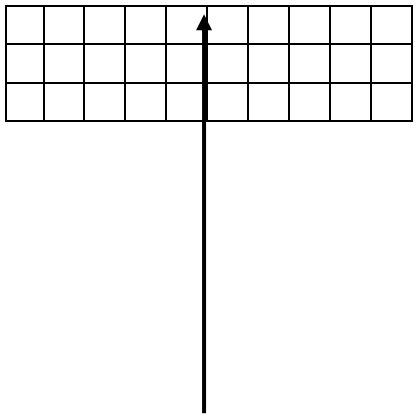
_____ 17c) Which line graphed has an undefined slope?

_____ 17d) Which line graphed has a positive slope?

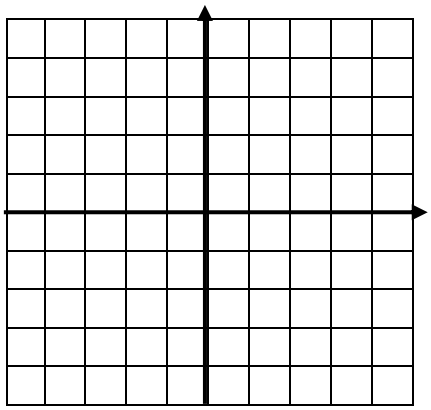
For problems 18-20, label the coordinates of all points used to graph the equation and show all work. (4 points each)

18. Use the intercept method to graph the equation: **-5x + 2y = 10**

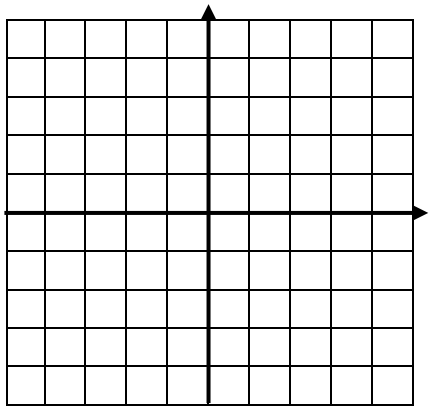




19. Use the method of your choice to graph the equation: **y – 3 = -6**



20. Graph the equation using the slope-intercept method: **3x + 4y = 4**



VI. For problems 21-28, solve the following word problems. Show all your work. You must have an equation to receive full credit. (4 points each, except #27 which is 5 points)

21. At a Navy Blue Angel air show two F/A-18 Hornet jets travel toward each other, both at a speed of 1000 miles per hour. After they pass each other, if they were to keep flying at the same speed in opposite directions, how long would it take them to be 500 miles apart? (D=rt)

21._____

22. A Math 100A student's test score increases from 70 to 95. What is the percent of increase in her score? (Round the answer to the nearest tenth.)

22._____

23. The length of a regulation tennis court is 6 feet greater than twice its width. The perimeter of the court is 228 feet. Find the length and width of the court. (P=2l+2w)

23. Length = _____**(2 points)**

Width = _____**(2 points)**

24. A circular above-ground swimming pool has a diameter of 24 feet. Determine the area and circumference of the pool accurate to the nearest tenth.

($A=\pi r^2$, $C=2\pi r$, use $\pi=3.14$)

a) Area 24a)_____ **(2 points)**

b) Circumference 24b)_____ **(2 points)**

25. Paul and Donna invest $12,000, part at 5% simple interest and the rest at 7% simple interest for a period of 1 year. How much money did they invest at each rate it their total annual interest from both investments was $800? (I=prt)

25._____@5% **(2 points)**

_____@7% **(2 points)**

26. If a college determines there should be 4 instructors for every 100 students, how many instructors are needed for an enrollment of 5500 students?

26._____

27. Each semester, students enrolling at a community college must pay tuition costs of $50 per credit hour plus a $50 registration-processing fee.

a) Write a linear equation that gives the total cost *C* to be paid by a student enrolling at the college and taking *x* credit hours. **(2 points)**

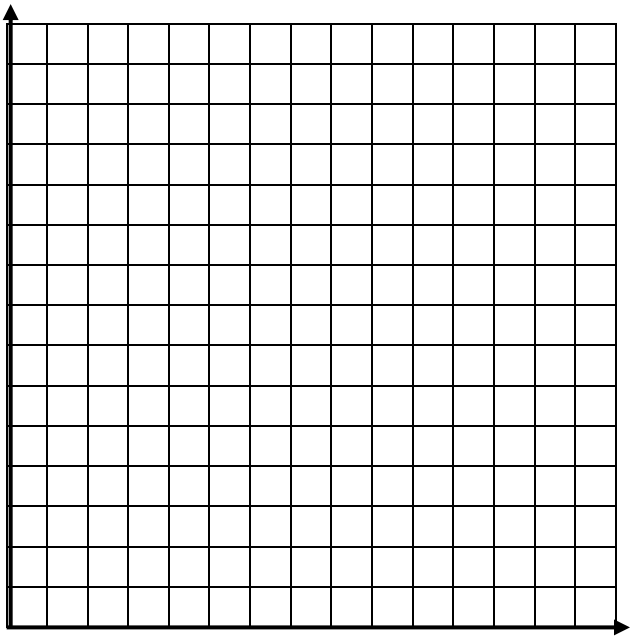
27a)_____

b) Find the enrollment cost for a student taking 12 credit hours.

(1 point)

27b)_____

c) Construct a graph that represents the cost of enrolling in 0-12 credit hours. Do not forget to label each axes. **(2 points)**



28. An isosceles triangle has a vertex angle measuring 42° greater than one of the base angles. The base angles of an isosceles triangle are equal. Find the measure of one base angle.

28._____

Math 930 Practice Exams Answers:

1. $\frac{-13}{24}$
2. -1
3. $\frac{1}{5}$
4. 14
5. 2x+26
6. 0
7. 49
8. x= 175
9. x= -2
10. x = 96cm
11. $p = \frac{7}{2}$
12. h = 20
13. y = 2
14. $x = -\frac{6}{7}$
15. $d = \frac{3A - m}{2}$
16. b = d – a – c
17.
    a. Line 3
    b. Line 2
    c. Line 1
    d. Line 4
18. Plotted and connected ordered pairs (0,5) and (-2,0)
19. Graph horizontal line y = -3
20. Graph equation $y = -\frac{3}{4}x + 1$
21. t = ¼ hour or t = 15 minutes
22. 35.7% increase
23.
    a. Length = 78 ft
    b. Width = 36 ft
24.
    a. Area = 452.2 ft^2
    b. Circumference = 75.4 ft
25.
    a. $2,000 @ 5%
    b. $10,000 @ 7%
26. 220 instructors
27.
    a. C = 50x + 50
    b. $650
    c. Plotted edge points are (0 , 50) and (12 , 650)
28. Base angle = 46°