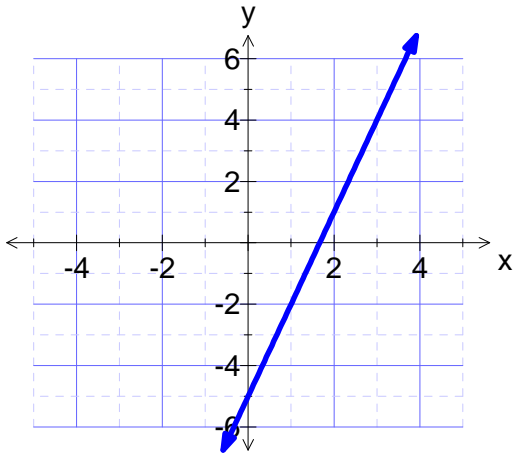# Math 1204 Review

Name: _____

1. What is the $2x - 5y = 20$ in slope y-intercept form? $y = \frac{2}{5}x - 4$

2. What is the equation of this relation? $y = 3x - 5$

3. What is the slope of a horizontal line? m=0 A vertical line? m is undefined

4. What is the x-intercept of the line $y = \frac{1}{2}x - 10$? (20,0)

5. What value of x makes $\frac{1}{2}x + 3 = 2x - 7$ true? $x = \frac{20}{3}$ or $6.\overline{6}$

6. What are the x-intercepts for $y = 2x^2 - 14x + 12$ (6,0) and (1,0)

7. What are the solutions to: $x^2 - 121 = 0$? x=11 or x=-11

8. What are the solutions to $x^2 - 10x + 21 = 0$ x=7 or x=3

9. What are the factors of: $x^2 + 3x + 2$? (x+1)(x+2)

10. What value of x makes the following equation true: $5^x + 10 = 135$? x=3

11. What is the vertex of the graph shown to the right? (4,-3)

12. What is the range of this graph?
{y|y≥-3,y∈**R**}

13. What is the vertex of the graph given by $4(y - 2) = (x + 5)^2$ (-5,2)

14. If $\frac{1}{2}(y+5) = |x-2|$, what would be the mapping notation for the image of $y = |x|$? (x,y) → (x+2,2y-5)
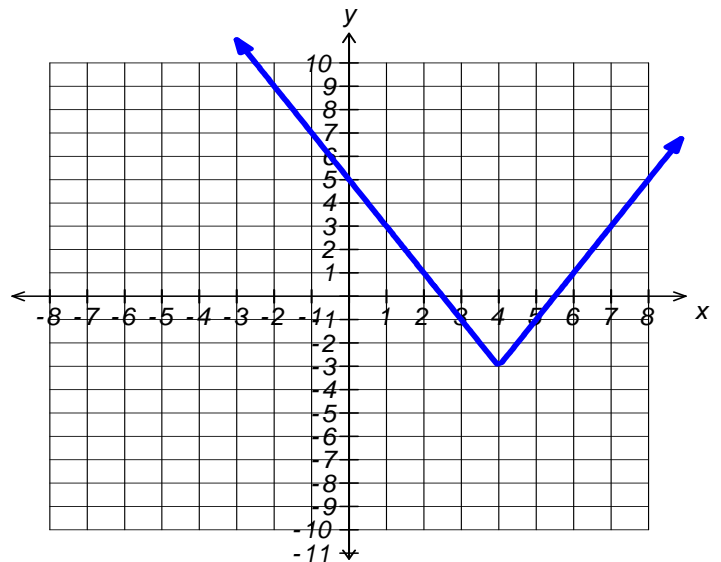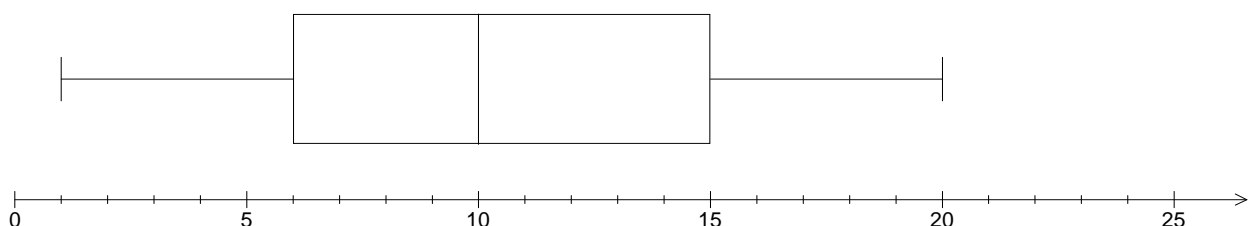
15. If $f(x) = 3x^2 + 7$, find f(7). 154

16. A survey of 500 people asks, 'What is your favourite NHL team?" When analyzing the results, which average should be used? mode

17. What is the mean of {22, 25, 15, 18, 78, 60, 60, 71, 44}? $43.\overline{66}$

18. In the box-and-whisker plot below, between which two numbers does 50% of the data lie? 6 and 15 (i.e. within the 'box')

19. What is the range of the data given in the box-and-whisker plot above? 19

20. What would be the approximate correlation coefficient for this data?
-0.85

21. Describe the data in this scatter plot. A strong negative linear correlation

22. Give the line of best fit for this scatter plot. y= -x+12 (Rem:there is a range of answers that would work here...)

23. A tutor charges a base fee of $30 and $5 for each hour every week. Write an equation that describes the tutor's weekly salary. S=5h+30

24. Which measure of central tendency would be the worst to use to find the average of {11, 11, 12, 12, 16, 16, 150} Mean
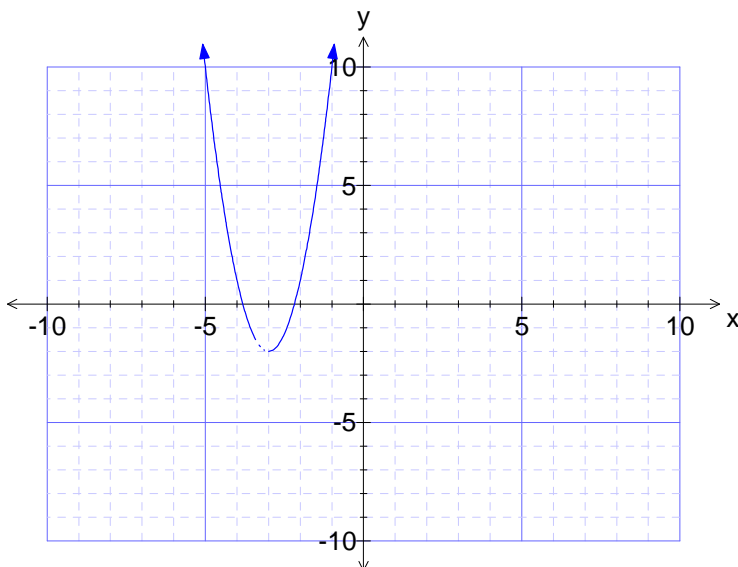
25. If y=mx+b, what is m equal to? $m = \frac{y-b}{x}$
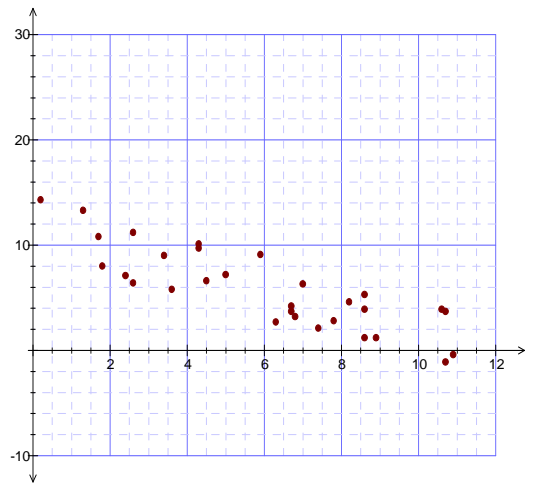
26. What is the vertex of the graph given by -3(y + 6) = (x + 1)^2? (-1,-6)

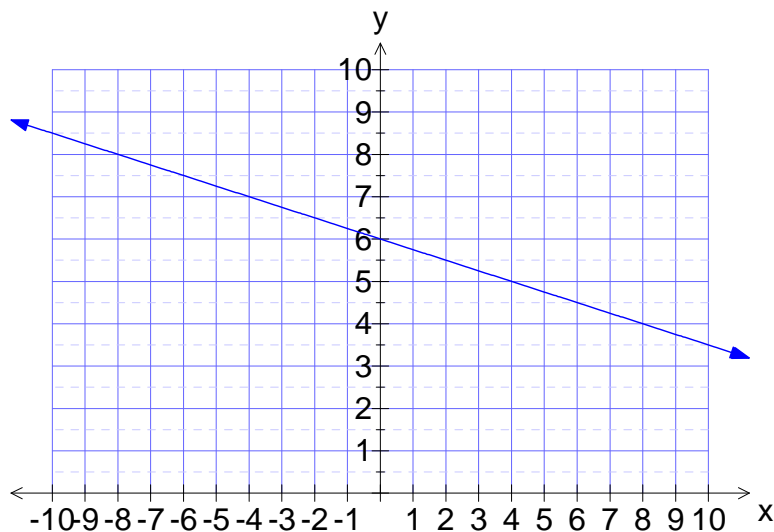27. What are the solutions to 3|x-10|=15 x={5,15}

28. What is the equation of this graph: $\frac{1}{3}(y + 2) = (x + 3)^2$

29. What is the value of |-7-4| - |6-(-11)| ? -6

30. What is the equation of the graph? $y = -\frac{1}{4}x + 6$

31. What would the slope of a line be if it passed through (-20, 2) and (10, 15) ?
m=13/30

32. A data set has a mean of 45 and a standard deviation 6. Knowing that the data is normally distributed, what is the range of values which would include 95% of the data? Between 33 and 57

33. The results of a survey are normally distributed. The scores are tabulated giving a mean of 84 and the standard deviation is 10. Describe the values that would be considered outliers. Less than 64 and Greater than 104

34. Which bin has the most values in the diagram to the right? 14-16

35. What is the total number of data values represented in this histogram? 25

36. Find the equation of the line that passes through (2, 10) and (4,5). $y = -\frac{5}{2}x + 15$

37. Solve for x: $\frac{1}{5}x - 2 = 1$ x=15
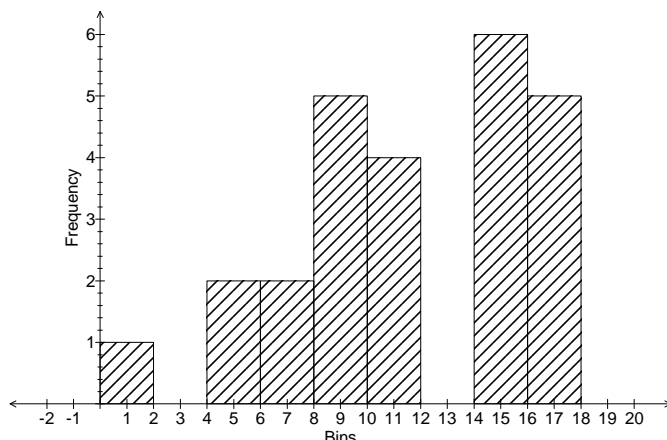
38. Solve for x: $(3^x)^4$ + 19 = 100 x=1

39. Find the x-intercepts and y-intercept for: $y = 2x^2 - x - 10$ x-int: (-2,0), (5/2,0)
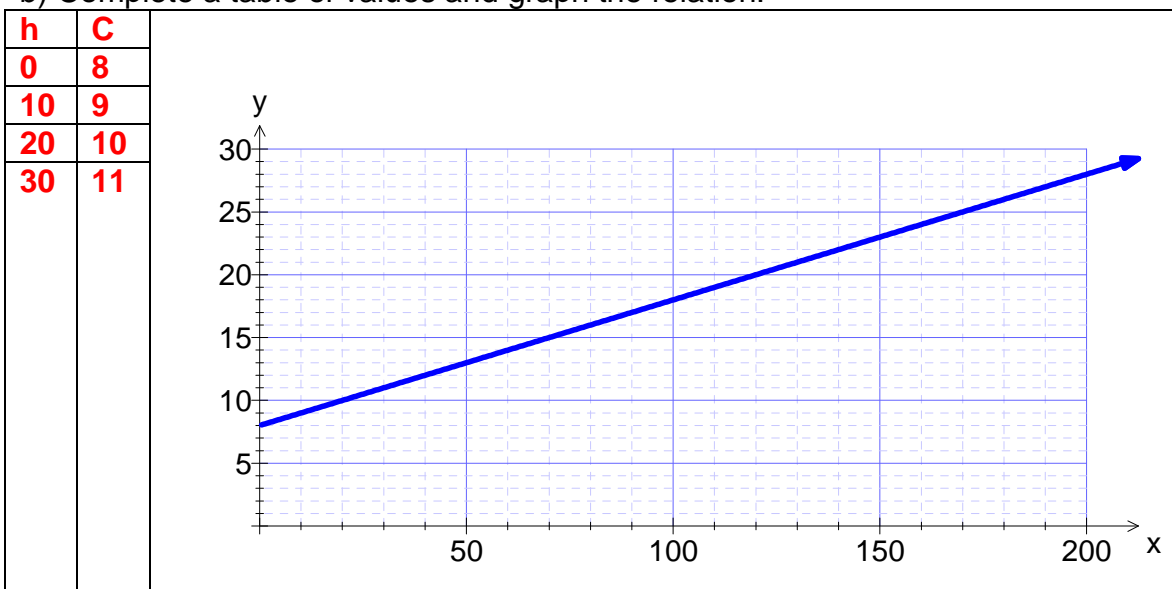y-int : (0,-10)

40. Factor each of the following:
a) $x^2 - 36$ (x-6)(x+6)   b) $3x^2 - 48$ 3(x-4)(x+4)

41. An internet company charges $8.00 plus $0.10 per hour online. The company charges for partial minutes.
a) Write an equation for this situation, using h for the # of hours online, and C for the total charge: C=0.1h+8
b) Complete a table of values and graph the relation.

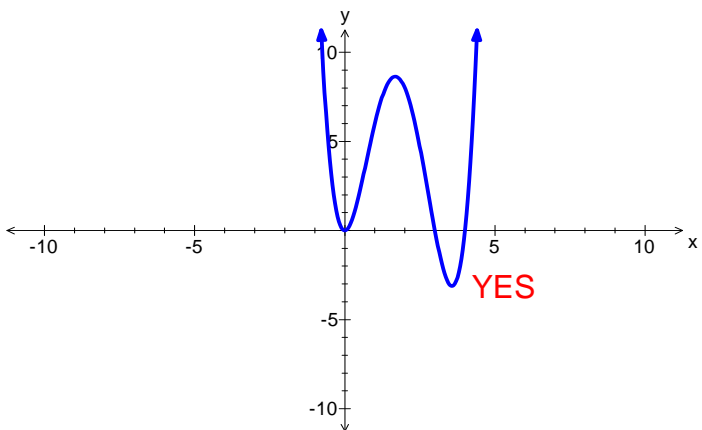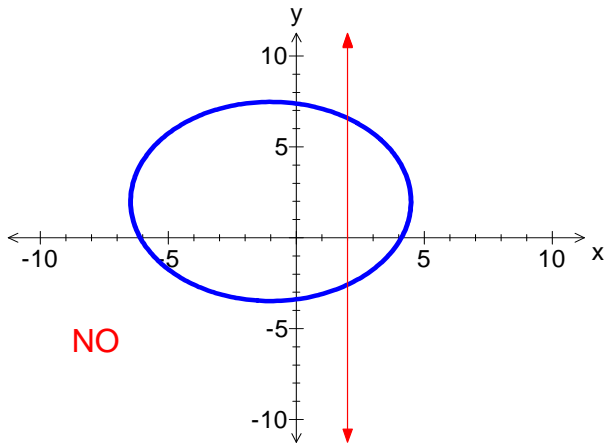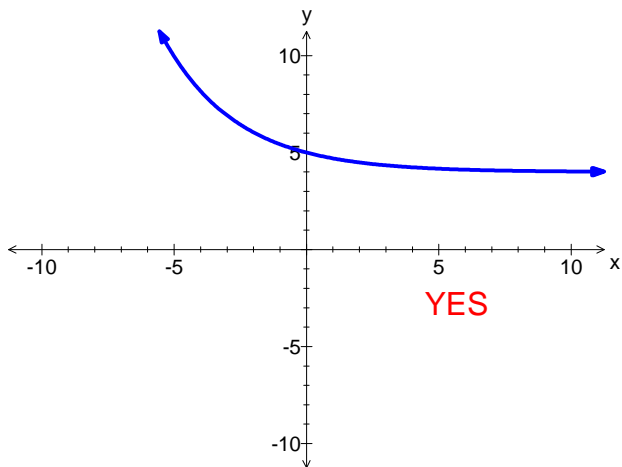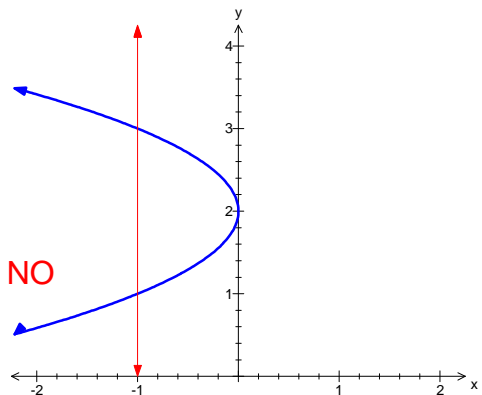| h	C
0	8
10	9
20	10
30	11

c) Algebraically determine how many hours your spent online if you are charged $26.00? 180 hours

42. Find the values of x that make the following equation true: $\left|\frac{1}{3}x + 6\right| = 15$ x=27 or x=-63

43. Write the equation of the graph to the right in transformational form. $-\frac{1}{2}(y - 5) = (x + 3)^2$
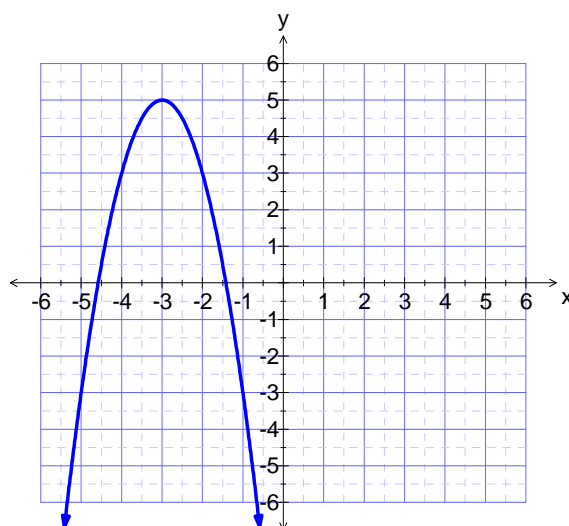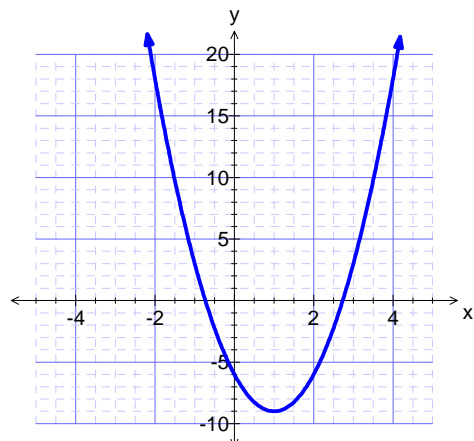
44. Identify which of the following graphs are functions:

NO

YES

NO

YES

45. f*(x)* = -3*x* + 10, calculate: (a) f(-½) f(-1/2)=23/2 or 11.5   (b) Find x if f(x)=79
                                                                                                          x= -23

46. Sketch the graph of the following function: $\frac{1}{3}(y+9) = (x-1)^2$
i) Identify the vertex   (1,-9)
ii) Give the mapping notation   (x,y) →(x+1,3y-9)
iii) Complete the table of values
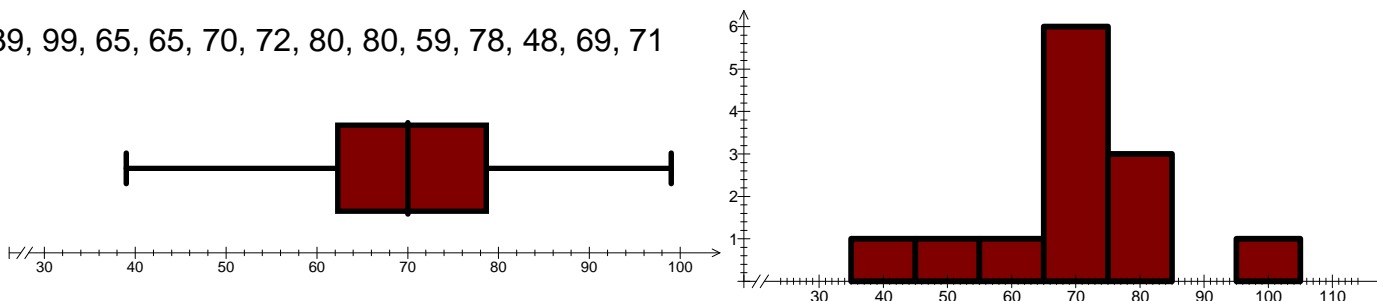
x	y
-3	9
-2	4
-1	1
0	0
1	1
2	4
3	9

x'	y'
-2	18
-1	3
0	-6
1	-9
2	-6
3	3
4	18

47. The following test scores were randomly collected from 13 students:

39, 99, 65, 65, 70, 72, 80, 80, 59, 78, 48, 69, 71

a) Create a Box and whisker plot and a histogram for this data:

b) Which test scores would you consider outliers? Describe how these are
shown on the graphs you created.   39 and 99- these are the whiskers on
                          the box plot and the two outermost bins on the histogram