Franklin Learning Center

Algebra 2 Summer Packet 2015/2016

Name: _____

1. Evaluate $7m+3mn$ when $m=8$ and $n=14$

2. Simplify: $675 \div (6+9 \div 3)$

3. $(3x - 2)(4x + 1) =$

4. Simplify $(4xy^2)^{-3}$

5. $(3x - 2)(4x + 1) =$

6. $(5x^2y^3)^2$

7. Find the equation that best represents the following word problem: In a certain freshman class, the number of girls is 83 less than twice the number of boys (b). The total number of students in that freshman class is 259. How many boys and girls are in that class?

8. Solve the system of equations

   $3x + 4y = 11$

   $x - 2y = -3$

9. Factor: $25x^2-16y^2$

10 solve $2x^2 + 5x-3=0$

11. if $3x+y=10$

$x-4y=-1$

then y = ?

12. Solve: $3x+17-5x=12-(6x+3)$

13. You and three friends are eating a pizza with 12 pieces. Each person eats the same number of pieces. Let x represent the number of pieces each person eats. Write an equations that represent` an algebraic model for the situation?

14. $(3x+4)^2 =$

15. Solve: $3x(x-4)(3x+5)=0$

16. Solve $3x^2+7x=4$

17. Simplify $(3cd^6)^2(cd)^4$

18. Your basic monthly charge for cell phone service is $35, which includes 250 free minutes. You pay a fee for each extra minute you use. One month you paid $7.50 for 25 extra minutes. Find your total bill if you use 47 extra minutes.

19. A runner ran at a rate of 0.12 mile per minute for 50 minutes on Monday, Wednesday and Friday. On Tuesday and Saturday the runner ran 0.14mile per minute for 60 minutes, and on Sunday the runner ran 0.08 mile per minute for 1 hour 30 minutes. What was the total mileage the runner covered during the week?

20. A manager is comparing the cost of buying ball caps with the company emblem from two different companies.

- Company X charges a $50 fee plus $7 per cap
- Company Y charges a $30 fee plus $9 per cap

For what number of ball caps will the manager's cost be the same for both companies?

21. When Justin goes to work, he drives at an average speed of 55 miles per hour. It takes about 1 hour and 30 minutes for Justin to arrive at work. His car travels about 30 miles per gallon of gas. If gas costs $3.45 per gallon, how much money does Justin spend to travel each mile to work?

22. For the data below, construct a frequency histogram using nine classes. Describe the shape of the histogram. The data set: The California Pick Three Lottery.

1 3 8 8 7 7 6 5 8 6
7 7 6 9 7 7 8 7 6 6
9 5 5 3 8 8 4 9 2 4

Find the mean mode and median

23. The data below are final exam scores of 10 randomly selected students and the number of hours they studied for the exam.

Hours.x	3	5	2	8	2	4	4	5	6	3
Scores, y	65	80	60	88	66	78	85	90	90	71

Make a line of the best fit.

Determine the linear regression equation that best fits the data.

24.

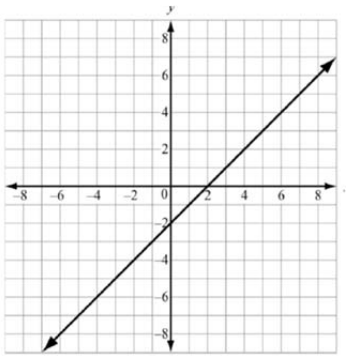
Using the frequency table below. Out of all women in the sample, determine the percent of women that live off campus.

	Live on Campus	Live off Campus	Total
Men	3216	4010	7226
Women	3824	3758	7582
Total	7040	7768	14,808

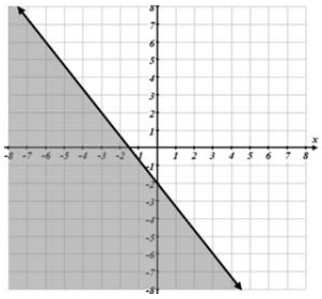
25. The test scores for 2 students are shown in the table. Make a box plot for the two data sets. Which student had the higher tests scores?

Student 1	85	63	72	90	78	67	82	53	88
Student 2	54	93	77	71	99	84	89	75	83

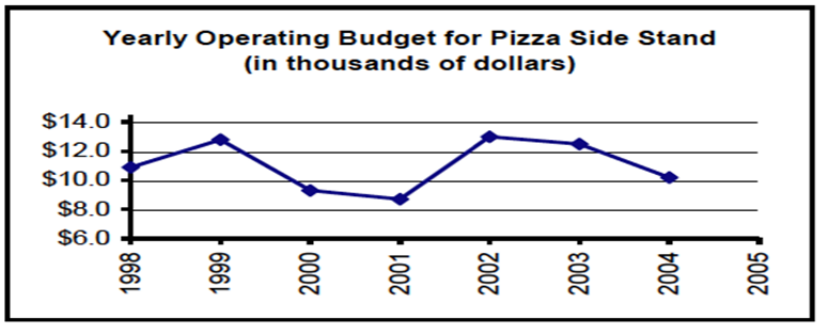
26. What is the equation corresponds to the graph shown below?



27. Identify the inequality graphed to the right.



28. The operating budget for a small food side stand in a park should be under $12000 for the year. How many of the years illustrated below did the pizza food side stand go over budget?



29. Mr. Tony operates a facility that assembles televisions and computers. It takes 5 days to assemble and 2 days to finish a television. It takes 4 days to assemble and 3 days to finish a computer. There is a maximum of 180 days allowed for assembly and 135 for finishing. Which system can be used to represent the situation if x represents the number of televisions and y represents the number of computer?

30. The first term in this sequence is –1.

n	1	2	3	4	5	⋯
a_n	-1	1	3	5	7	⋯

Write the function that represents the sequence.