

Rising Algebra Students

Name: _____

Please complete the packet over the summer and return to your Math 8 teacher the first week of class. **SHOW ALL WORK WHEN POSSIBLE!**



The list of websites below contains tutorials, practice, and quizzes on these topics and more.

<http://www.regentsprep.org>

<http://www.math.com>

<http://library.thinkquest.org>

<http://www.mathgoodies.com/lessons.toc-vol.shtm>

<http://education.jlab.org/solquiz/>

Name _____

Part 1

Write an expression for each phrase.

1. number n increased by nineteen.
2. ten less than negative three is equal to the a number squared
3. twice the sum of a number and five

Evaluate each expression for the given values of the variables.

4. $3a + 5$, for $a = 5$
5. $5m + 9 + 7n$, for $m = 8$ and $n = 1$
6. $20 - (a - b)$, for $a = 3$ and $b = -2$

Solve each equation.

$$7. 5 = \frac{s}{-7} \qquad 8. r + 6 = -17 \qquad 9. -3f = 21$$

Solve and graph each inequality.

$$10. x + 8 \geq 12 \qquad 11. \frac{h}{4} < -16 \qquad 12. j - 7 = 4$$

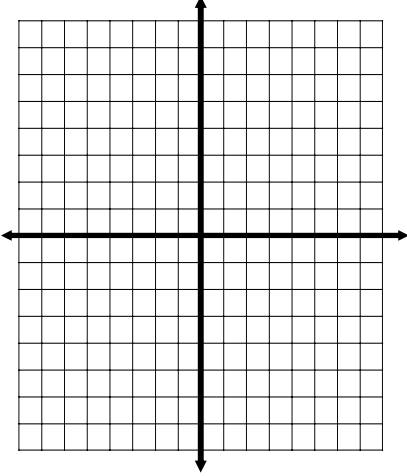
**Part 2**Find the mean, median, mode, and mode. When the answer is not an integer, round to the **nearest tenth**.

13. 44, 56, 57, 63, 89, 44, 55

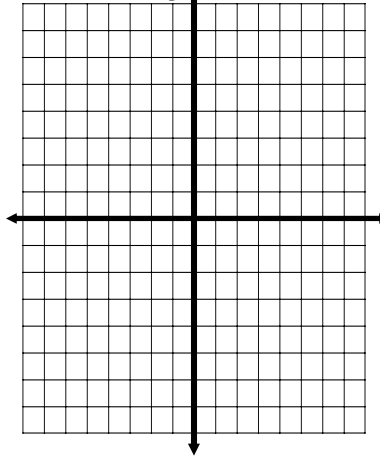
14. 4, 5, 2, 3, 2, 3, 3, 3, 1, 1, 3

Graph the following equations on a coordinate plane.

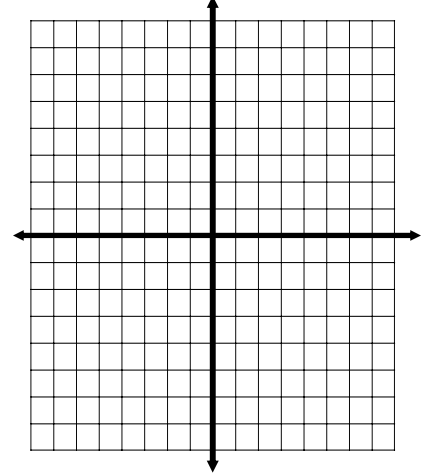
15. $y = x + 4$



16. $y = \frac{1}{3}x + 2$



17. $y = -2x + 2$



Write the equation that represents the relationship between x and y as shown in the table.

18.

x	y
-2	-7
-1	-4
0	-1
1	2

19.

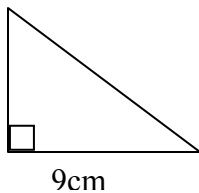
x	-1	0	1	2	3	4
y	3	1	-1	-3	-5	-7

Part 3

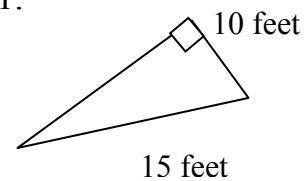
Use the Pythagorean Theorem to determine the length of the missing side on each right triangle.

20.

7cm



21.



Find the *volume and surface area* of the following polyhedras.

22. A cone that has a radius of 2 cm and a height of 10 cm? Use 3.14 for π .

23. The edge of the base of a square pyramid is 6 inches. The height of the pyramid is 8 inches.

Part 4

Display the data using frequency distribution, box and whisker plot, or a scatter plot.

24. The data below concerns the ages of children on a baseball team. Make a frequency table the represents the given data.

{12,15,14,12,15,14,15,13,12,13}

25. The data below displays scores by students on a challenging test. Make a box and whisker plot of the data.

{63, 70, 68, 68, 75, 75, 76, 75, 76, 77, 82, 64, 65, 68, 68, 70}

26. Display the following data in a scatter plot.

x	3	6	4	3	5	8	9	8	10
y	1	2	3	4	2	5	8	3	1

27. The stem and leaf plot shows the basketball scores for the Central High team for the past two seasons. Find the mean, median, mode, range and the upper quartile for this set of data.

7	1 3 5 7
8	0 0 2 3 5
9	2 3 4 4 5
10	1 2

28. The data shows the number of students on each team at a middle school. What is the range of the data?

{125,132,156,145,123,156,157,165,147,160}

Part 5

29. Members of a soccer team each have one pair of red shorts and one pair of black shorts. Each person also has one red shirt, one white shirt, and one blue shirt. How many different uniforms are possible for a team member?

30. A bag contains 4 quarters, 3 dimes, and 1 nickel. Another bag contains 4 gumballs and 2 lollipops. One item is chosen at random from each bag. What is the probability of selecting a quarter and a gumball?

31. A drawer contains 12 large paper clips and 8 small paper clips. The drawer also contains 5 green thumbtacks, 3 red thumbtacks, and 2 white thumbtacks. A paper clip and a thumbtack are chosen at random from the drawer. What is the probability of selecting a large paperclip and a white thumbtack?