



Columbus High School Freshman Summer Math Packet

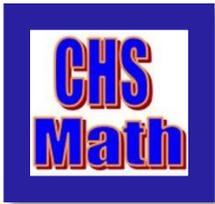
Name: _____

Math Teacher's Name: _____

THIS PACKET IS DUE THE FIRST DAY OF SCHOOL.

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Dear Columbus High School Student,

The teachers in the Mathematics Department are looking forward to working with you next year. In preparation for a successful year in math, you must review the objectives by completing the problems included in this packet. The packet is divided into three sections: a basic skills review, a review of 8th grade Georgia performance standards (GPS), and a performance task. The objectives covered in the packet are those you should have **mastered** in your previous math classes, so you should take this packet very **seriously**. If you have difficulty with the problems or need to review the objectives, you can utilize Georgia's middle or high school math textbook resources at www.classzone.com (see page 6 for more information).

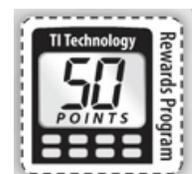
The summer math packet should be completed using the following guidelines:

- Complete the packet using a pencil.
- You should work all problems for the basic skills and GPS review sections. Each page contains a blank Student Work Area in which to show your computations. **Work should be shown for reference and legitimacy of individual attempt.**
- When you have finished all problems for each objective, transfer your final answers to the Summer Packet Answer Sheets, which can be found on pages 28-31.
- Complete the performance task according to the given directions.

The packet will be graded for accuracy as well as effort. This will be the first grade in your math class, and it is important to get off to a great start. **Grade deductions will occur for incomplete work.** In addition, your first test grade will be the summer math packet test, which is typically given the second week of your math class. **Quite often, students who do not complete the summer math packet on their own or who use a calculator when not allowed score poorly on this test.** It is in your **BEST** interest to complete the packet on your own, researching topics for which you need reviewing and completing computations to the best of your ability.

All summer math packets are due on the first day of school. If you do not turn in your summer math packet the first day of school, you will incur a serious penalty to your grade. Once you obtain your class schedule, **use a pen or marker to NEATLY complete the information on the front cover of the packet.**

If you purchase a Texas Instrument graphing calculator, you should affix the rewards seal in the designated area on the back cover of this packet. Please do not attach a Proof of Purchase or receipt.



Should you have other questions or if we can be of any assistance, please call the school at 706-748-2534 or email the department chairpersons, Storie Atkins at Atkins.Storie.L@muscogee.k12.ga.us or Paul Hampton at Hampton.Paul.E@muscogee.k12.ga.us .

Sincerely,

Handwritten signatures of Storie Atkins and Paul Hampton in black ink.

Storie Atkins & Paul Hampton
Math Department Co-Chairpersons

Summer Math Packet Checklist:

Front Cover



Columbus High School
Math I
Summer Packet

Name: _____
Math Teacher's Name: _____

✓ Use a pen or marker to NEATLY record the front cover information. Your math teacher's name can be written once you have obtained your schedule.

✓ Complete the objective problems in pencil and using the space provided in the Student Work Area.

Numbers and Operations
MN1
Students will understand different representations of numbers, including square roots, exponents and scientific notation.

I. Simplify.

1. $\sqrt{64}$
2. $\sqrt{225}$

Student Work Area

✓ Complete the GPS Performance Task according to the given directions.

1. Stack the cups one at a time, and measure the height of the stack with each additional cup. Complete the following table with the appropriate measurements, rounded to the nearest tenth. If necessary, you may  out and use the ruler provided in Appendix A on page 31.

Number of Cups	Height (in cm)
1	
2	
3	
4	
5	



✓ If applicable, attach your calculator proof of purchase to the back cover of packet.



Back Cover

✓ **Bring your completed summer math packet THE FIRST DAY OF SCHOOL.**

The Columbus High Summer Math Packet is intended to review necessary basic skills as well as GPS (Georgia Performance Standards) objectives. The packet is divided into three sections: a basic skills review, GPS review, and a performance task. Unless otherwise stated, the problems should be worked without the aid of a calculator. The mathematical content included in the packet reviews and evaluates students' knowledge of the following 8th grade Georgia Performance Standards:

NUMBER AND OPERATIONS

Students will understand the numeric and geometric meaning of square root, apply properties of integer exponents and use scientific notation.

M8N1. Students will understand different representations of numbers including square roots, exponents, and scientific notation.

- a. Find square roots of perfect squares.
- b. Recognize the (positive) square root of a number as a length of a side of a square with a given area.
- c. Recognize square roots as points and as lengths on a number line.
- d. Understand that the square root of 0 is 0 and that every positive number has two square roots that are opposite in sign.
- e. Recognize and use the radical symbol to denote the positive square root of a positive number.
- f. Estimate square roots of positive numbers.
- g. Simplify, add, subtract, multiply, and divide expressions containing square roots.
- h. Distinguish between rational and irrational numbers.
- i. Simplify expressions containing integer exponents.
- j. Express and use numbers in scientific notation.
- k. Use appropriate technologies to solve problems involving square roots, exponents, and scientific notation.

GEOMETRY

Students will use and apply geometric properties of plane figures, including congruence and the Pythagorean theorem.

M8G1. Students will understand and apply the properties of parallel and perpendicular lines and understand the meaning of congruence.

- a. Investigate characteristics of parallel and perpendicular lines both algebraically and geometrically.
- b. Apply properties of angle pairs formed by parallel lines cut by a transversal.
- c. Understand the properties of the ratio of segments of parallel lines cut by one or more transversals.
- d. Understand the meaning of congruence: that all corresponding angles are congruent and all corresponding sides are congruent.

M8G2. Students will understand and use the Pythagorean theorem.

- a. Apply properties of right triangles, including the Pythagorean theorem.
- b. Recognize and interpret the Pythagorean theorem as a statement about areas of squares on the sides of a right triangle.

ALGEBRA

Students will use linear algebra to represent, analyze and solve problems. They will use equations, tables, and graphs to investigate linear relations and functions, paying particular attention to slope as a rate of change.

M8A1. Students will use algebra to represent, analyze, and solve problems.

- a. Represent a given situation using algebraic expressions or equations in one variable.
- b. Simplify and evaluate algebraic expressions.
- c. Solve algebraic equations in one variable, including equations involving absolute values.
- d. Solve equations involving several variables for one variable in terms of the others.
- e. Interpret solutions in problem contexts.

M8A2. Students will understand and graph inequalities in one variable.

- a. Represent a given situation using an inequality in one variable.
- b. Use the properties of inequality to solve inequalities.
- c. Graph the solution of an inequality on a number line.
- d. Interpret solutions in problem contexts.

M8A3. Students will understand relations and linear functions.

- a. Recognize a relation as a correspondence between varying quantities.
- b. Recognize a function as a correspondence between inputs and outputs where the output for each input must be unique.
- c. Distinguish between relations that are functions and those that are not functions.

ALGEBRA Continued

- d. Recognize functions in a variety of representations and a variety of contexts.
- e. Use tables to describe sequences recursively and with a formula in closed form.
- f. Understand and recognize arithmetic sequences as linear functions with whole number input values.
- g. Interpret the constant difference in an arithmetic sequence as the slope of the associated linear function.
- h. Identify relations and functions as linear or nonlinear.
- i. Translate among verbal, tabular, graphic, and algebraic representations of functions.

M8A4. Students will graph and analyze graphs of linear equations and inequalities.

- a. Interpret slope as a rate of change.
- b. Determine the meaning of the slope and y -intercept in a given situation.
- c. Graph equations of the form $y = mx + b$.
- d. Graph equations of the form $ax + by = c$.
- e. Graph the solution set of a linear inequality, identifying whether the solution set is an open or a closed half-plane.
- f. Determine the equation of a line given a graph, numerical information that defines the line or a context involving a linear relationship.
- g. Solve problems involving linear relationships.

M8A5. Students will understand systems of linear equations and inequalities and use them to solve problems.

- a. Given a problem context, write an appropriate system of linear equations or inequalities.
- b. Solve systems of equations graphically and algebraically, using technology as appropriate.
- c. Graph the solution set of a system of linear inequalities in two variables.
- d. Interpret solutions in problem contexts.

DATA ANALYSIS AND PROBABILITY

Students will use and understand set theory and simple counting techniques; determine the theoretical probability of simple events; and make inferences from data, particularly data that can be modeled by linear functions.

M8D1. Students will apply basic concepts of set theory.

- a. Demonstrate relationships among sets through use of Venn diagrams.
- b. Determine subsets, complements, intersection, and union of sets.
- c. Use set notation to denote elements of a set.

M8D2. Students will determine the number of outcomes related to a given event.

- a. Use tree diagrams to find the number of outcomes.
- b. Apply the addition and multiplication principles of counting.

M8D3. Students will use the basic laws of probability.

- a. Find the probability of simple independent events.
- b. Find the probability of compound independent events.

M8D4. Students will organize, interpret, and make inferences from statistical data

- a. Gather data that can be modeled with a linear function.
- b. Estimate and determine a line of best fit from a scatter plot.



Online assistance is available at www.classzone.com. You can refer to middle school math textbook resources or the Mathematics 1 textbook.

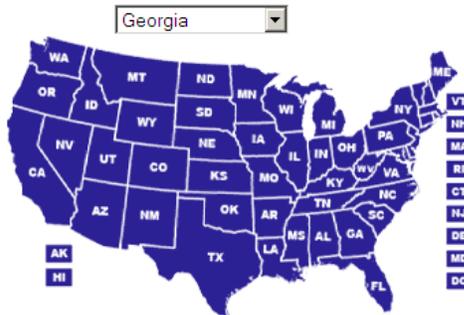
To access classzone, go to www.classzone.com

1 Select Your Subject

	Middle School	High School
Language Arts	<input type="radio"/>	<input type="radio"/>
Math	<input checked="" type="radio"/>	<input type="radio"/>
Science	<input type="radio"/>	<input type="radio"/>
Social Studies	<input type="radio"/>	<input type="radio"/>
World Languages	<input type="radio"/>	<input type="radio"/>

2 Select Your State

Click on the map or use the pull-down menu to find your state-specific resources.



3 Find Your Book



Select your subject as Middle School math, the State of Georgia, and GO. You will find topics covered in 8th grade standards for the textbooks shown below.



[McDougal Littell Math Course 1, Georgia](#)



[McDougal Littell Math Course 2, Georgia](#)



[McDougal Littell Math Course 3, Georgia](#)

Once you have selected a textbook, you should have access to most sections in classzone; however, you will not be able to access the Online Book. You will find helpful information in the More Examples and PowerPoint Presentations sections.

Help With the Math



- [@HomeTutor](#)
- [Hints and Homework Help](#)
- [More Examples](#)
- [PowerPoint Presentations](#)

Some 8th grade standards are addressed in the Mathematics 1 textbook you will use next year. You can create an account and activate the Mathematics 1 online textbook and resources by following these instructions:

1. Launch your browser.
2. Enter the URL- activate.classzone.com (do not include www)
3. Enter the activation code for the appropriate book. Press Continue

Product Name: Mathematics 1 - eEdition
ACTIVATION CODE: 2369167-40



Activate Your Products

Were you given an activation code? Enter it here:

Activation Code: - Example: 1234567-10 or 12345678-100

When you click the Continue button, you will be asked to sign into ClassZone or to create a ClassZone username and password. After you sign in, your activation will be complete.

Your activation code should look similar to the examples above.
 If you are a student and don't have an activation code, please talk to your teacher.
 If you are a teacher and don't have an activation code, please contact your publisher.

New Visitors

Don't have a ClassZone username and password yet?

[Create a Student Account](#)

[Create a Teacher Account](#)

Create a New Student Account

In order to create your ClassZone student account, we first need to ask for your birthday. Your birthdate is never stored in our system, but we ask for your birthdate to validate the age of our users. For more information, please see our [privacy policy](#).

Your Birthday

Birthday:

Create New Student Account

Please enter the information below to create your student account.

Personal Information

Tell us a little about yourself.

First Name:

Last Name:

Sign In Information

You'll use this information each time you are asked to sign into ClassZone.

Registration Complete

4. Create a Student Account
 - a. Enter your birthday
 - b. Enter your personal information
 - c. Enter your security information
5. Select Continue on the Registration Complete page.
6. Click Go to ClassZone on the Success! page.
7. You can now select high school math for Georgia and use the online textbook for Mathematics 1, which is the book you will use next year.



[High School Math, Course 1, 2004-2007](#)

Success!

You have successfully activated the product.

This product is now in your account.

Mathematics 1 - eEdition - GA
 978-0-618-94597-9

Basic Skills Review

BASIC SKILLS REVIEW**Student Work Area**

Perform arithmetic operations with decimals, fractions, integers and real numbers.

I. Evaluate each without the use of a calculator.

(Round to the nearest thousandths, where necessary.)

1. $189.04 + 753.2 - 58.003$

2. $758.2 - 9.029$

3. $138.78 \cdot 6.05$

4. $3705.55 \div 8.2$

5. $3034 \div 8.2$

6. $\frac{5}{8} + 3\frac{1}{2} + \frac{3}{4} + \frac{7}{8}$

7. $57\frac{1}{5} - 26\frac{1}{4}$

8. $7\frac{2}{3} \cdot 8\frac{1}{4} \cdot 12\frac{4}{7}$

9. $20\frac{5}{9} \div 15\frac{2}{3}$

10. $\left(\frac{3}{8}\right)\left(\frac{2}{7}\right)\left(\frac{14}{15}\right) \div \frac{9}{10}$

11. $-186.25 + 79.004$

12. $-350 + 120 - (-230)$

13. $87\frac{2}{5} - 14\frac{1}{3} - \left(-66\frac{7}{10}\right)$

14. $(-2.5)(-2)(0.5)(-13)$

15. $1024 \div \left(-\frac{4}{3}\right)$

GPS Review

NUMBERS AND OPERATIONS

M8N1

Students will understand different representations of numbers, including square roots, exponents and scientific notation.

Student Work Area

I. Simplify.

1. $\sqrt{64}$

2. $\sqrt{225}$

3. $\sqrt{361}$

4. $\sqrt{4x^2}$

II. Solve.

5. The area of a square is 625 in^2 . Find the length of each side.

6. If the area of a square is $16x^2 \text{ units}^2$, find the length of each side.

III. Solve for x.

7. $x^2 = 0$

8. $x^2 = 25$

9. $x^2 = 121$

IV. Complete.

10. $\sqrt{75}$ is between what two, consecutive perfect square roots?

_____ $< \sqrt{75} <$ _____

NUMBERS AND OPERATIONS

M8N1

Students will understand different representations of numbers, including square roots, exponents and scientific notation.

Student Work Area

V. Perform the indicated operation. Simplify all answers.

11. $2\sqrt{3} + 4\sqrt{3}$

12. $3(2 + \sqrt{3})$

13. $\sqrt{\frac{25}{9}}$

14. $\sqrt{\frac{1}{4}} \cdot \sqrt{\frac{2}{9}}$

15. $2\sqrt{12} + 8\sqrt{3} + 5\sqrt{12}$

16. $3\sqrt{24} - 2\sqrt{54} + 5$

VI. Simplify.

17. $\frac{12^7}{12^5}$

18. $\frac{2r^4}{r^{-3}s}$

19. $\left(\frac{2z^5}{zy^3}\right)^2$

20. $(4c^2d)(6c^4d^2)$

VIII. Write in scientific notation.

21. 460,000,000

22. 0.00432

23. $\frac{6.3 \times 10^6}{3.0 \times 10^2}$

24. $(1.2 \times 10^8)(4 \times 10^2)$

GEOMETRY

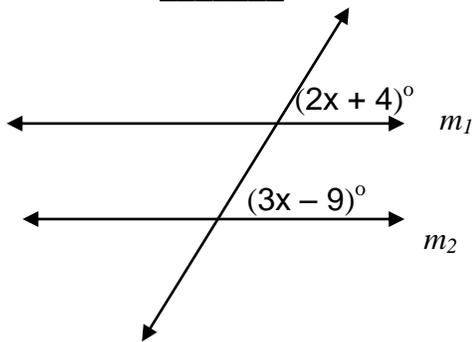
M8G1

Students will understand and apply the properties of parallel and perpendicular lines and understand the meaning of congruence.

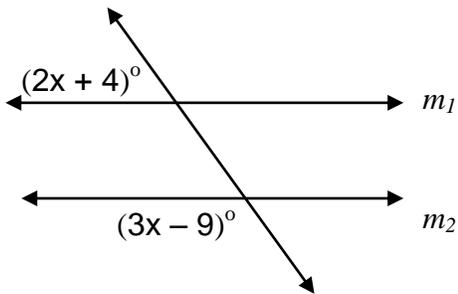
IX. Complete.

25. In the figure below, what value of x would make lines m_1 and m_2 parallel?

a. $x =$ _____



b. $x =$ _____

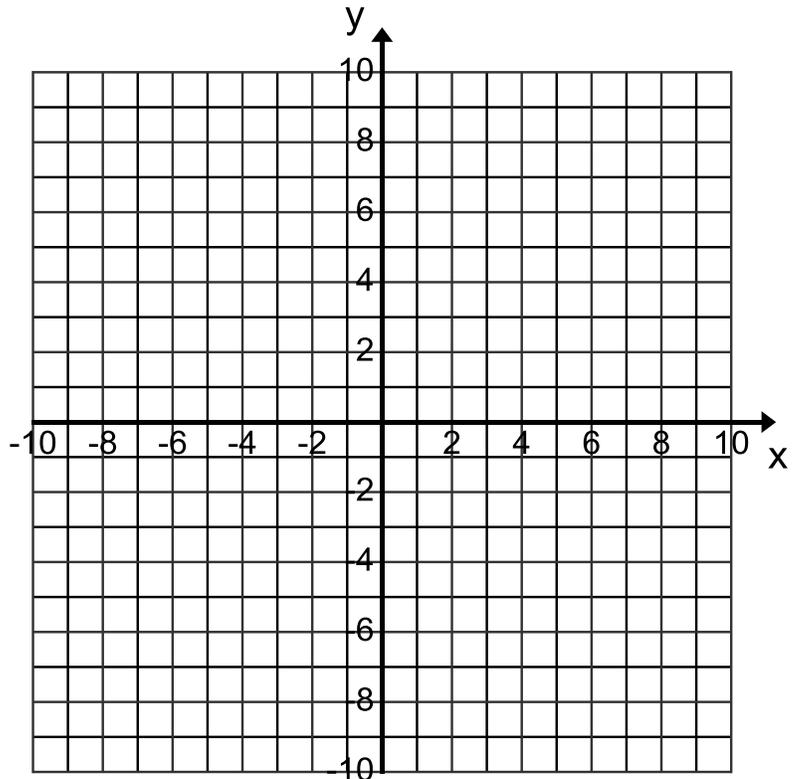


26. Use the grid to complete a-d.

- Construct line p which passes through points $(2,3)$ and $(-3, -4)$.
- Construct line r through point $(0, 4)$ and parallel to line p .
- Construct line t through point $(0, -4)$ and perpendicular to line p .
- Determine the equation of lines r and t .

Student Work Area

26.



Equation for line r : _____

Equation for line t : _____

GEOMETRY

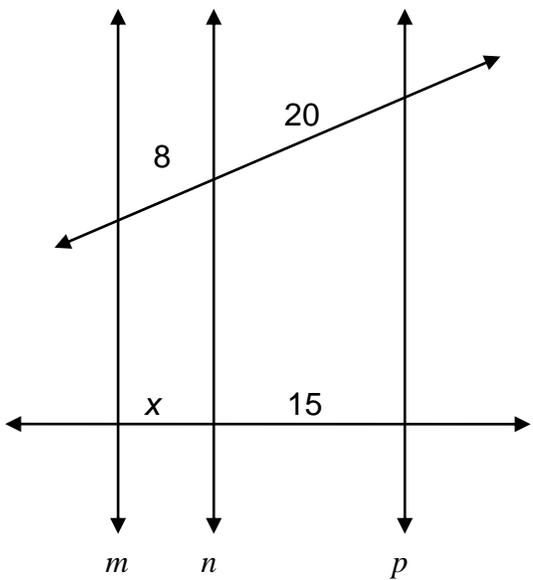
M8G1

Students will understand and apply the properties of parallel and perpendicular lines and understand the meaning of congruence.

Student Work Area

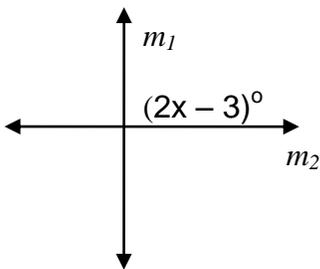
27. Lines m , n , and p are parallel to each other. Determine the length of segment x .

$x =$ _____



28. What value of x would make lines m_1 and m_2 perpendicular?

$x =$ _____



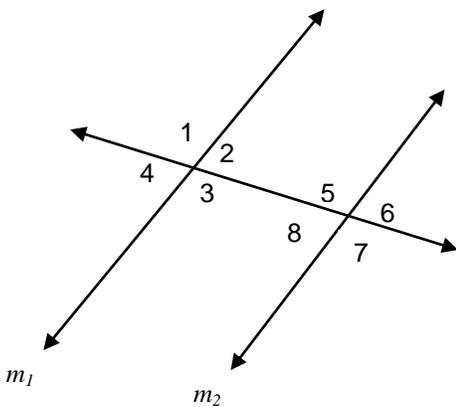
GEOMETRY

M8G1

Students will understand and apply the properties of parallel and perpendicular lines and understand the meaning of congruence.

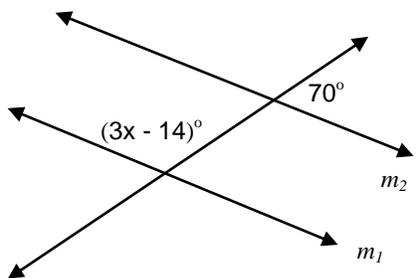
29. Lines m_1 and m_2 are parallel. List all pairs of angles that fit the description.

- a. corresponding angles
- b. alternate interior angles
- c. alternate exterior angles
- d. consecutive interior angles



30. Lines m_1 and m_2 are parallel. Determine the value of x .

$x =$ _____



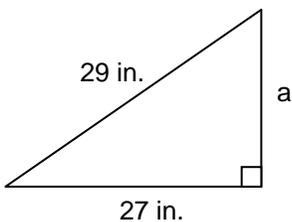
Student Work Area

GEOMETRY

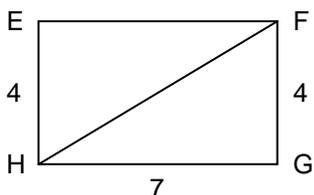
M8G1

Students will understand and use the Pythagorean theorem.

31. If a right triangle has legs of 18 cm and 80 cm, what is the length of the hypotenuse?
32. If the hypotenuse of a triangle measures 15 inches, and one side is 9 inches, what is the measurement of the third side?
33. Amelia needs to put a diagonal divider into a rectangular box that is 5 in. wide and 12 in. long. What is the length of the divider she needs for the box?
34. Find the length of the leg of the right triangle below.
 Give an approximation to 3 decimal places.



35. If EFGH is a rectangle, what is FH?
 Give an approximation to 3 decimal places.



Student Work Area

Denotes calculator allowed

ALGEBRA

M8A1

Students will use algebra to represent, analyze, and solve problems.

36.

Judy bought p pencils at 14 cents each and n notebooks at \$1.25 each. Write an equation for the total dollar amount, A , that Judy spent.

37.

Write an expression to show how many fish are left if 20 are caught out of a school that started with f fish.

38. Simplify:

$$(2x + 3y) - (5x - y) + 8x$$

39. Evaluate $5a - 2b$ if

$$a = 4 \text{ and } b = -1.$$

40. Solve:

$$3v + 9 = 2(4 - v) + 12v$$

41. Solve: $|2x + 6| = 10$

42. Rewrite the equation to isolate m : $y = mx + b$

43. The formula for the area of a trapezoid is:

$$A = 0.5(b_1 + b_2) \cdot h$$

If the area is 20 and the height is 2, what is the sum of the bases?

44.

A taxi charges \$1.00 for the first mile and \$0.50 for each additional quarter mile. If the total fare was \$6.00, how many miles were driven?

45.

Find 3 weight combinations of peanuts and raisins that would total exactly 500 calories if peanuts have 6 calories per gram and raisins have 4 calories per gram.

Student Work Area

ALGEBRA

M8A2

Students will understand and graph inequalities in one variable.

46. Solve: $3x + 2 \leq -2x + 7$

47. Solve: $-\frac{x}{7} > 2$

X. Graph the solution to the following inequalities on the number line provided.

48. $3x > 12$ or $-2x \geq 12$

49. $-19 \leq 3x + 2 \leq 20$

XI. Represent the following situations using an inequality.

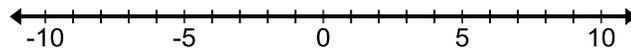
50. Samantha wants to earn at least \$6.50 per hour and knows the most her company will pay is \$9.25 per hour. Represent her possible pay rate.

51. Represent the amount Tony will pay for a car if he will pay no more than \$16,500.

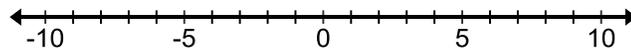
52. In a given grading period, Steve takes three tests. If he makes grades of 74 and 83 on the first two tests, what grade must he make on the last test to have an overall average of at least 80 for the grading period?
(The grade must be a whole, non-decimal value)

Student Work Area

48.



49.



**ALGEBRA
M8A3 – M8A4**

Students will understand relations and linear functions. Students will graph and analyze graphs of linear equations.

XII. Complete.

53.

A field house has a section where the seating can be arranged so the first row has 11 seats, the second row has 15 seats, the third row has 19 seats and so on. If there is sufficient space for 30 rows in the section, how many seats are in the last row of the section?

54.

A skydiver who jumps from a plane gains speed while falling. For one jump, altitude readings were made every ten seconds until the parachute opened. Data for the readings is shown below.

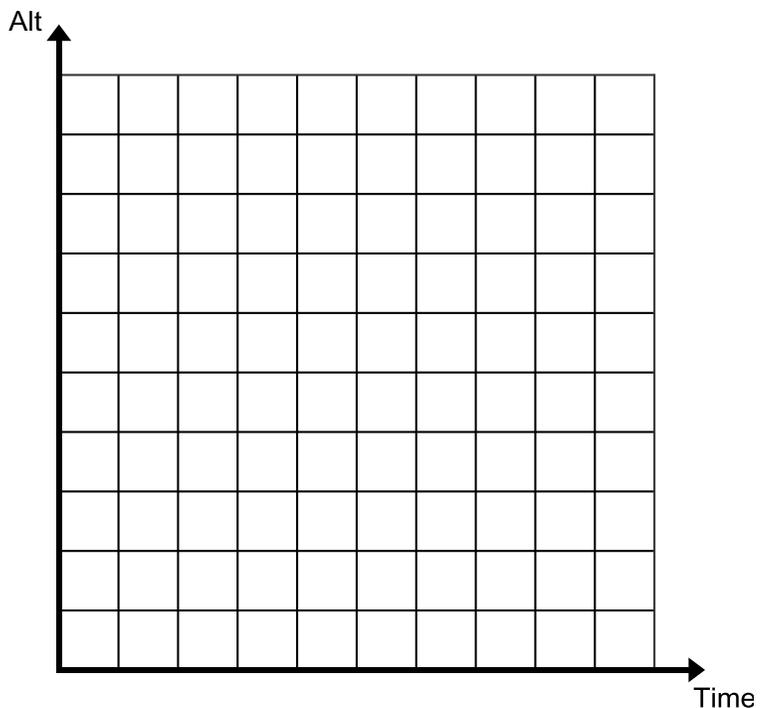
Construct a graph of the data using an appropriate scale, and analyze the data by developing an algebraic model. Use your findings to predict the altitude at 65 seconds.

Time (sec)	Altitude (meters)
0	500
10	430
20	360
30	290
40	220
50	150

Student Work Area

53.

54.



Algebraic Model/Equation: _____

Predicted altitude at 65 seconds: _____

**ALGEBRA
M8A3 – M8A4**

Students will understand relations and linear functions.

Students will graph and analyze graphs of linear equations.

55. Find the slope of the line passing through the points (1, -3) and (0, -5).

56. Find the slope and y-intercept of the line $y = -2x - 1$

57. Find the x-intercept and y-intercept of the line $2x + 6y = 18$.

58. Change $-2x + 7y = -8$ into the slope-intercept form of a line.

XIII. Graph each of the following on the coordinate grid provided.

59. Graph a line that passes through the point (3, 5) and has a slope of zero.

60. Graph a line that passes through the point (-4, 0) and has an undefined slope.

61. Graph: $y = 2x - 1$

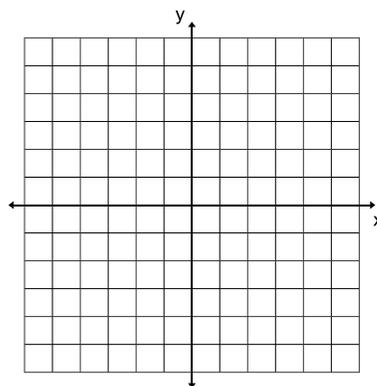
62. Graph: $x - 4y = 12$

63. Graph: $x = 3$

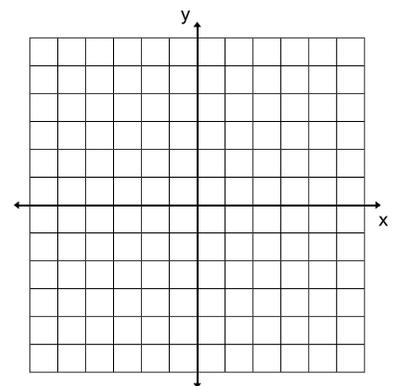
64. Graph: $\frac{1}{2}x + \frac{1}{4}y = -1$

Student Work Area

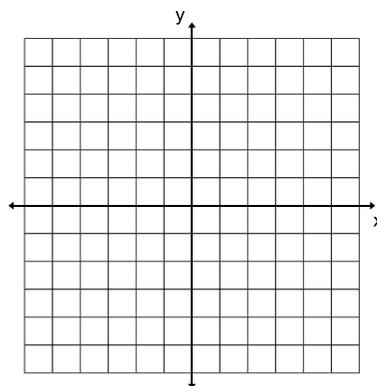
59.



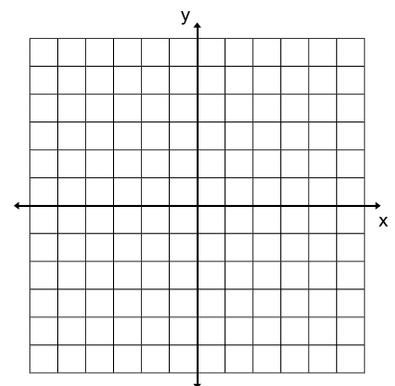
60.



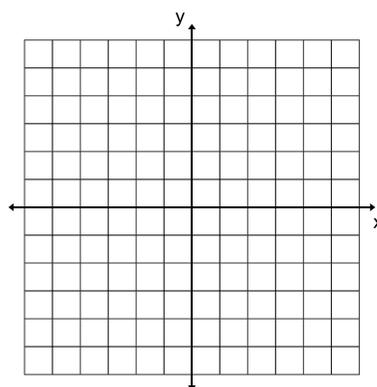
61.



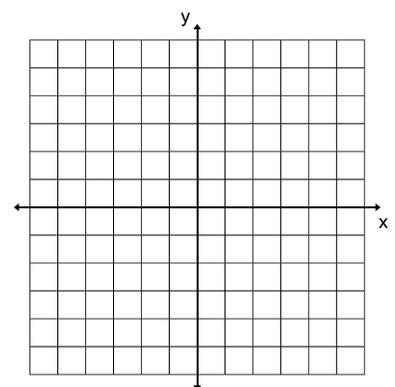
62.



63.



64.



ALGEBRA

M8A5

Students will understand systems of linear equations and inequalities and use them to solve problems.

XIV. Solve the following systems of equations.

65. $x + 2y = 11$
 $x - 2y = -1$

66. $7x - 4y = 17$
 $3x + 5y = 14$

67. $x + y = 5$
 $3x - 2y = 20$

68.

You are planning a birthday party for your younger brother at a skating rink. The cost of admission is \$4.00 per adult and \$2.00 per child, and there is a limit of 25 people. You have \$60 to spend for the tickets. Determine how many adults and how many children you can invite.

Choose the most appropriate algebraic method to solve this problem. Variables should be chosen and labeled. Be sure to put your solutions in written form and include a graph in your solution response.

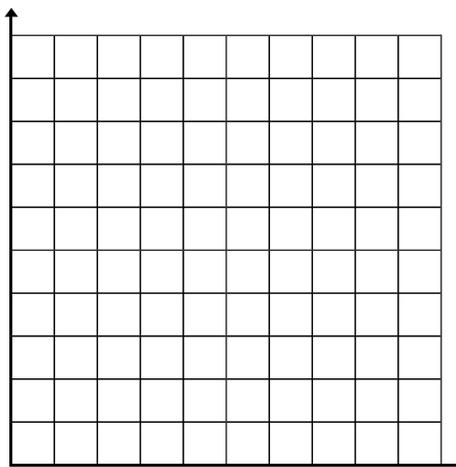
Student Work Area

68.

Assigned variables:

Algebraic analysis and solution:

Graphic analysis and solution:



Solution summary:

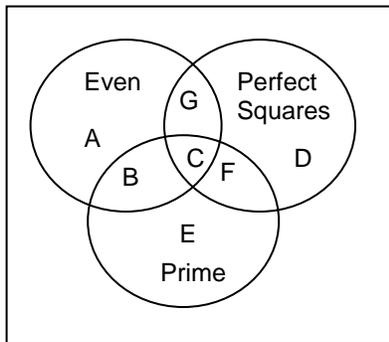
**DATA ANALYSIS AND PROBABILITY
M8D1**

Students will apply basic concepts of set theory.

XV. Complete

69.

The circles in the Venn Diagram below represent three different sets of numbers, even numbers, prime numbers, and perfect squares. Letters A – E represent five distinct non-overlapping regions of the Venn Diagram. For each of the numbers below, indicate which region best represents where it should be placed in the diagram.



- a) 1 b) 2
c) 7 d) 9

XVI. Use the following sets to complete #70-72.

$A = \{1, 2, 3, 4, 5, 6\}$
 $B = \{2, 4, 6, 8, 10\}$

Record answers in set notation.

70. Write the subset of A that includes all multiples of 3.
71. What is the union of sets A and B?
72. What is the intersection of sets A and B?

**DATA ANALYSIS AND PROBABILITY
M8D3**

Students will use the basic laws of probability.

XVII. Complete.

73.

M^cHappyland sells hamburgers as their major menu item. They offer three choices of burgers (1, 2, or 3 patties), four flavors of milkshakes (chocolate, vanilla, strawberry, or mocha) and two sizes of fries (regular or large). If a customer chooses a burger, shake, and fry, how many different orders are possible?

74. If a fair coin is flipped 3 times:

- What is the probability that a tail is the result for all 3 flips?
- What is the probability that exactly two heads occur?
- What is the probability that no heads occur?

75.

In a certain carnival game, a player wins a stuffed animal if he guesses the outcome of the flip of a fair coin AND the correct suit (heart, diamond, spade, club) of a card drawn from a standard deck of cards. The card is replaced, and the deck is re-shuffled for the next player.

- What are all of the possible outcomes for the flip of a fair coin?
- What are all of the possible outcomes for guessing the correct suit of a card drawn from a full, standard deck of cards?
- Since a player must correctly guess both the coin flip and a card's suit from the deck, create a sample space for all of the possibilities of events when someone plays the game?
- What is the probability that a player wins a stuffed animal?

GPS Performance Task

Name: _____

Record all explanations in complete sentences.
Where necessary, round all decimal answers to the nearest tenths place.

Calculator allowed

Stack of Cups – GPS Performance Task

You are a package design director for a company that has decided to introduce a different size of cups as a new product line. Since this is a new product for your team, you decide to study actual stacks of cups to help you discover which features of the cup affect the height of the stack.

Materials Needed

- 10 identical, stackable cups
- Centimeter ruler (see the Math Tools Appendix, if necessary)

I. Collect Data

To collect the data for your study, you will need to gather ten identical cups. The cups may be paper, plastic, or glass, as long as they are identical and stackable. You may even try recycling cups from fast food trips, as long as they are all the same size and from the same restaurant.

1. Stack the cups one at a time, and measure the height of the stack with each additional cup. Complete the following table with the appropriate measurements, rounded to the nearest tenth. If necessary, you may cut out and use the ruler provided in Appendix A on page 31.

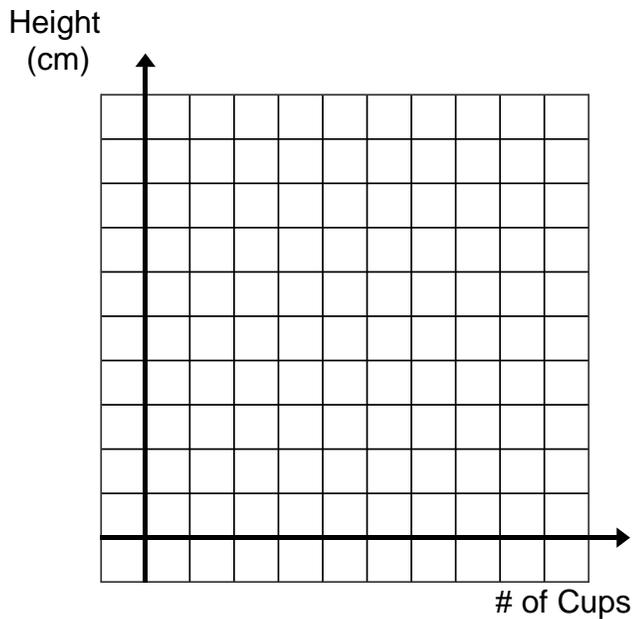
Number of Cups	Height (in cm)
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	



2. Look for any patterns that might help you determine the relationship between the height of the stack and the number of cups in the stack. State them below, using complete sentences.

II. Graph Data

3. Graph the data you collected on the set of axes provided. Be sure to use and label an appropriate scale.



4. a. Based on your graph, predict, without measuring, the height of a stack of
- 16 cups _____
- 100 cups _____
- b. Using complete sentences, explain how you arrived at your predictions.

5. a. Write a rule that best describes the height of your stack in terms of the number of cups.

Let n = the number of cups and $H(n)$ = the height of the stack of cups.

$$H(n) = \underline{\hspace{2cm}}$$

- b. Now, use your rule to complete the given table below.

n	$H(n)$
20	
40	
60	

6. Using your answer for #5a, if the height of a package can be no more than 40 cm, what is the maximum number of your cups that will fit in the package?.

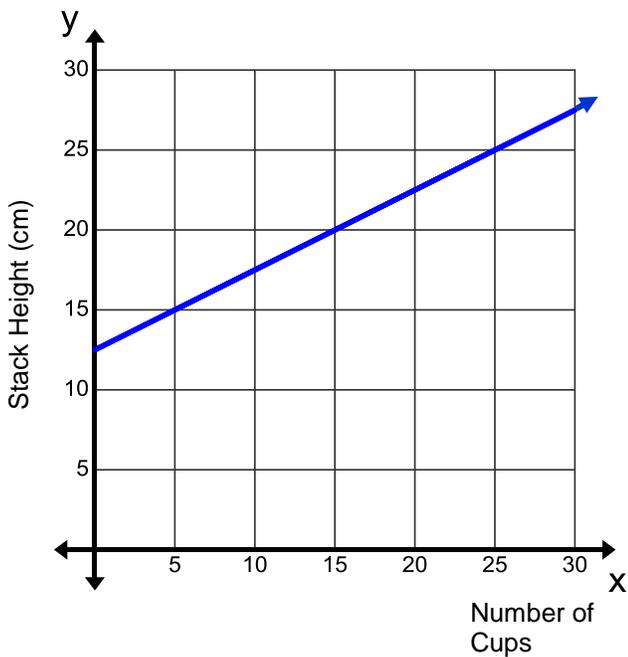
III. Data Application

Your team determined a rule for a particular cup style to be as follows:

$$H(n) = 0.5n + 12.5,$$

where n is the number of cups in the stack and $H(n)$ is the height of the stack of cups, measured in cm.

A graph for $H(n)$ is shown below.



Use the rule and/or graph to complete #7-8.

7. a. State the slope (include units).

b. Describe the slope in terms of cups and stack height.

8. a. State the y-intercept (include units).

b. Describe the y-intercept in terms of cups and stack height.

IV. Statistical Analysis

For two weeks, your company charted the daily sales of packages for a particular style of cups. The data is as follows:

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14
# of Packages Sold	59	27	32	23	46	27	52	31	37	43	45	21	19	27

9. Calculate the mean, median, and range for the set of data.

Mean = _____ Median = _____ Range = _____

10. a. Complete the following frequency distribution table.

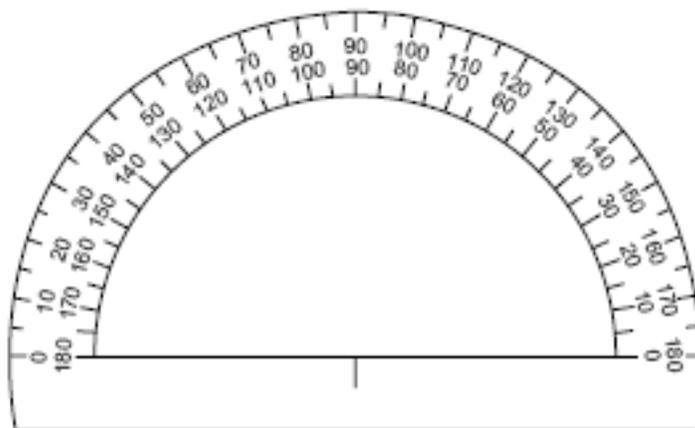
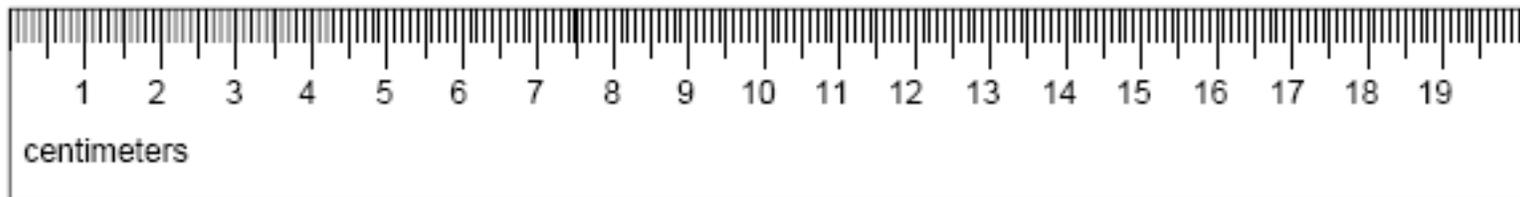
Interval	Frequency
16-20	
21-25	
26-30	
31-35	
36-40	
41-45	
46-50	
51-55	
56-60	

- b. Construct an accurately drawn and correctly labeled histogram of the frequency table.

Math Tools Appendix

A printable copy of a standard ruler can be found at the following website:

www.vendian.org/mncharity/dir3/paper_rulers/



SUMMER MATH PACKET ANSWER SHEETS

NAME : _____

Directions: Transfer your final, simplified answers from each section onto the following answer sheets.

BASIC SKILLS REVIEW

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____

GPS REVIEW

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____ $< \sqrt{75} <$ _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____

GPS REVIEW Continued

Name: _____

21. _____

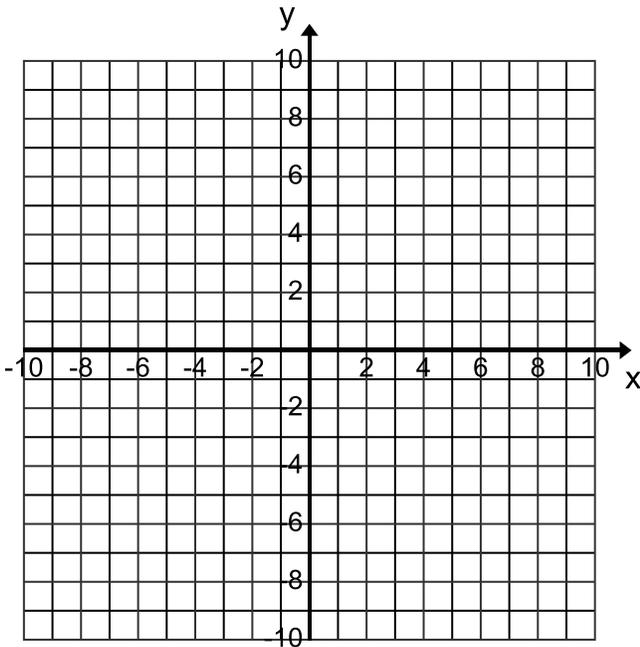
22. _____

23. _____

24. _____

25. a. _____ b. _____

26.



Equation for line r : _____

Equation for line t : _____

27. _____

28. _____

29. a. _____

b. _____ c. _____ d. _____

30. _____

31. _____

32. _____

29

33. _____

34. _____

35. _____

36. _____

37. _____

38. _____

39. _____

40. _____

41. _____

42. _____

43. _____

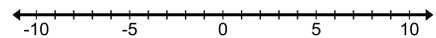
44. _____

45. _____

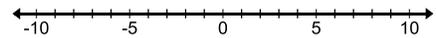
46. _____

47. _____

48.



49.



50. _____

51. _____

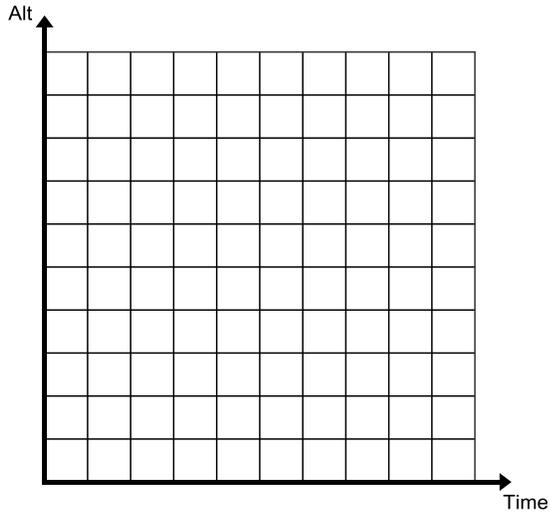
GPS REVIEW Continued

Name: _____

52. _____

53. _____

54.



Algebraic Model / Equation:

Predicted altitude at 65 sec: _____

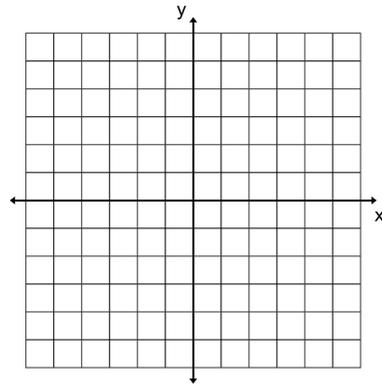
55. _____

56. Slope: _____ y-int: _____

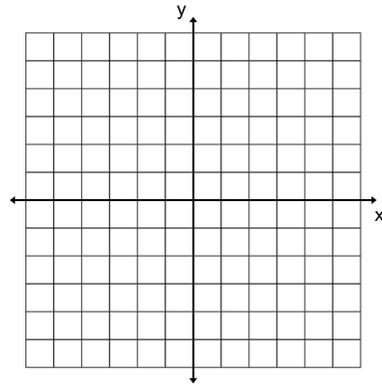
57. x-int: _____ y-int: _____

58. _____

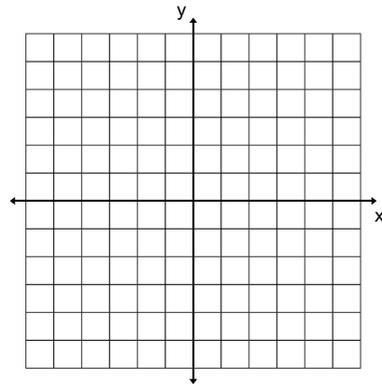
59.



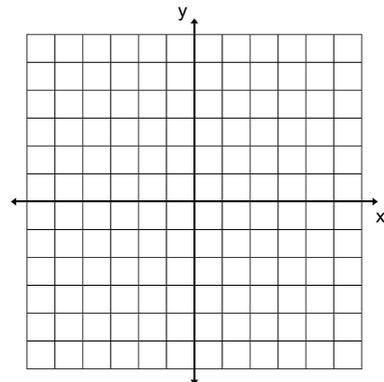
60.



61.

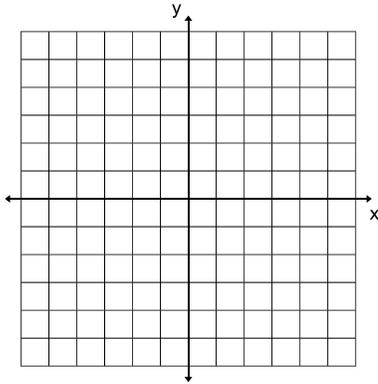


62.

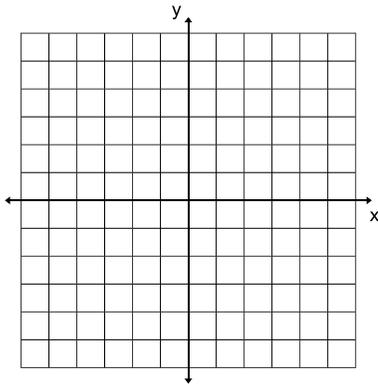


GPS REVIEW Continued

63.



64.



65. $x = \underline{\hspace{2cm}}$ $y = \underline{\hspace{2cm}}$

66. $x = \underline{\hspace{2cm}}$ $y = \underline{\hspace{2cm}}$

67. $x = \underline{\hspace{2cm}}$ $y = \underline{\hspace{2cm}}$

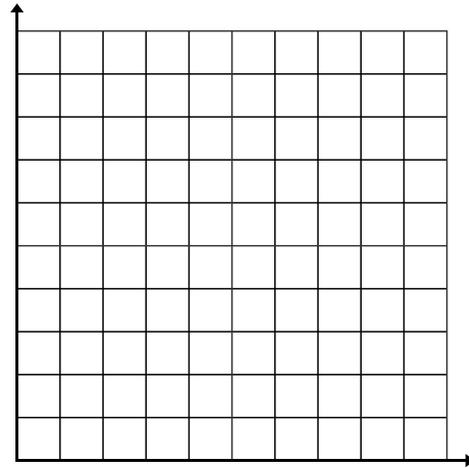
68.

Assigned variables:

Algebraic analysis and solution:

Name: _____

Graphic analysis and solution:



Solution summary:

69. a. _____ b. _____

c. _____ d. _____

70. _____

71. _____

72. _____

73. _____

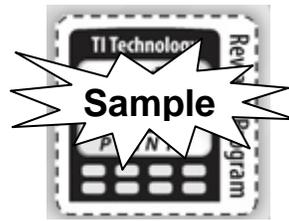
74. a. _____ 75. a. _____

b. _____ b. _____

c. _____ c. _____

d. _____

**If applicable, attach your
TI Calculator Rewards
HERE**



**(Write your first initial and last
name on the back, in pencil)**