Columbus High School Freshman Summer Math Packet
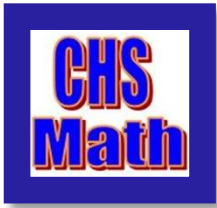
Name: _____

Math Teacher's Name: _____

You will write in your math teacher's name at freshman orientation.

THIS PACKET IS DUE <u>TUESDAY, AUGUST 4th</u>, DURING FRESHMAN ORIENTATION.

TABLE OF CONTENTS

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 8th grade math standards by completing the assignments outlined in this packet. The assignments are divided into three sections: a basic skills review, a review of 8th grade Georgia standards of excellence (GSE), and a performance task. The basic skills review and performance task are included in this packet, but the 8th grade GSE performance standards will be assessed using the website, USATestPrep. **The online assignments will open on May 25th and remain available through 11:59 PM on August 9th**. 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*.

The summer math packet should be completed using the following procedures, which are outlined in greater detail on page 5:
- You may print the packet and complete it in hardcopy form using a pencil **OR** you may digitally upload your answers and evidence of student work in Google Classroom.
- For problems worked in the basic skills section and USATestPrep online assignments, you should show your work as directed. **Work MUST be shown for reference and legitimacy of individual attempt. Work shown will also count as a portion of the grades included for the summer math packet.**
- Complete the performance task as directed in hardcopy or digitally in Google Classroom.

The packet will be graded for accuracy as well as effort. The packet and online work will count as **MULTIPLE** grades and will be the first grades in your math class. So, it is important to make sure these grades provide a great start to your freshman year. **Grade deductions will occur for incorrect or incomplete work, and zeros will be given for failure to complete packet related assignments or show work.** In addition, your first test grade will be the summer math packet test, which is typically given the second week of school. 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 review and completing computations to the best of your ability.

All summer math packets are due on Tuesday, August 4th, during Freshman Orientation.
If you cannot attend the orientation, you must make arrangements to turn the packet in to Mrs. Atkins on or before 9 AM on August 5th. Failure to do so will result in a serious penalty to your grade.

If you purchased 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 Storie Atkins at
Atkins.Storie.L@muscogee.k12.ga.us

Sincerely,

Storie Atkins
Math Department Chair

CHS 8th Grade Math Review Sessions
June 22* and June 29*
9:00 AM – 12:00 PM

CHS math teachers will provide overview sessions for the 8th grade math standards as outlined in the units below. Each session will have 25 seats available and will contain the same content material. To allow as many students as possible to take advantage of these sessions, please sign up for **ONLY ONE SEAT** on **ONE DAY**.

Seats may be reserved at https://signup.com/go/jnknOQt

Georgia Department of Education

GSE Eighth Grade Curriculum Map							
1st Semester				2nd Semester			
Unit 1 (4 – 5 weeks)	Unit 2 (4 – 5 weeks)	Unit 3 (4 – 5 weeks)	Unit 4 (2 – 3 weeks)	Unit 5 (3 – 4 weeks)	Unit 6 (5 – 6 weeks)	Unit 7 (4 – 5 weeks)	Unit 8 (3 – 4 weeks)
Transformations, Congruence and Similarity	Exponents	Geometric Applications of Exponents	Functions	Linear Functions	Linear Models and Tables	Solving Systems of Equations	Show What We Know
MGSE8.G.1 MGSE8.G.2 MGSE8.G.3 MGSE8.G.4 MGSE8.G.5	MGSE8.EE1 MGSE8.EE.2 (evaluating) MGSE8.EE.3 MGSE8.EE.4 MGSE8.EE.7 MGSE8.EE.7a MGSE8.EE.7b MGSE8.NS.1 MGSE8.NS.2	MGSE8.G.6 MGSE8.G.7 MGSE8.G.8 MGSE8.G.9 MGSE8.EE.2 (equations)	MGSE8.F.1 MGSE8.F.2	MGSE8.EE.5 MGSE8.EE.6 MGSE8.F.3	MGSE8.F.4 MGSE8.F.5 MGSE8.SP.1 MGSE8.SP.2 MGSE8.SP.3 MGSE8.SP.4	MGSE8.EE.8 MGSE8.EE.8a MGSE8.EE.8b MGSE8.EE.8c	ALL Plus High School Prep Review

Freshman Math Packet Peer Tutoring
June 22*, June 29*, & August 3*
1:00 PM – 3:00 PM
Room 133 of CHS Math Wing
NO Reservation Needed

* All dates are tentative, pending state and local mandates for school re-openings and building availability.

Summer Math Packet Procedures/Checklist
(Select <u>ONE</u> Option for Packet Submission)

Option #1
Hardcopy Submission
- ✓ Print the following pages of the summer math packet:
    - o Front Cover
    - o Basic Skills Review – pages 6-7
    - o USA Test Prep Student Work – pages 9-12 (Optionally, you may also use your own paper)
    - o GSE Performance Task – pages 13-16
- ✓ Complete the Basic Skills Review section, showing your work in the provided area and recording your answers on page 7.
- ✓ Complete the GSE Standards Review problem sets on the USATestPrep website, showing your work for each section on pages 9-12 <u>or</u> on your own paper, labeled with the same sections as pages 9-12.
- ✓ Complete the GSE Performance Task as directed on pages 13-16.
- ✓ **Arrange all your printed, packet pages in order by page number. Staple all your packet pages together, write your name on the top, right corner of *each* page, and bring it with you to Freshman Orientation on Tuesday, Aug. 4th .**

Option #2
Digital Submission

- ✓ Go to classroom.google.com.
- ✓ If you have an MCSD account, you may sign in using that account. If you do not have an MCSD account, you will need a Google account to enroll in the class. Make sure the name associated with Google Classroom matches the name used for CHS official documentation. Any account name that does not match a name to our accepted student list will be removed from Google Classroom.
- ✓ Once signed in, at the top, click Add ➕ ⟩ Join class and enter the code imwqn4u
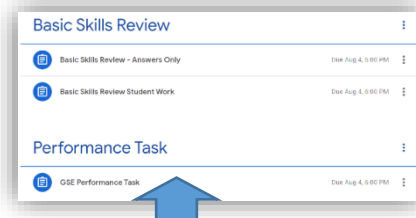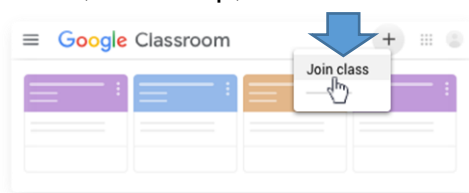
- ✓ Select the Classwork menu and complete the three assignments, (1) performance task and (2) basic skills review. This replicates work for pages 6-7 and 13-16 of the packet.
- ✓ Complete the GSE Standards Review problem sets on the USATestPrep website
- ✓ Your student work for the basic skills review and USATestPrep website may be uploaded to Google Classroom assignments labeled as student work <u>or</u> turned in as hardcopies at freshman orientation.
- ✓ **If turning in hardcopies of student work, staple all pages together, write your name on the top, right corner of *each* page, and bring it with you to Freshman Orientation on Tuesday, Aug. 4th .**

BASIC SKILLS REVIEW

Perform arithmetic operations with fractions, integers and real numbers. Evaluate each <u>without</u> a calculator.

**(All fractions should be in simplest form.
Decimals should be rounded to 3 places, if necessary)**

(1) If submitting hardcopy, all work must be shown in the Student Work Area and answers recorded on page 11.
(2) If submitting digitally in Google Classroom, enter answers in the Google Assignment *Basic Skills Review - Answers Only*. Submit supporting work in the Google Assignment *Basic Skills Review Student Work*.

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

2. $\frac{16}{5} - \frac{13}{4}$

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

4. $20\frac{5}{9} \div 15\frac{2}{3}$

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

6. $-350 + 120 - (-230)$

7. $\frac{5}{12} - \frac{3}{16}$

8. $(-2.50)(-2)(0.5)(-13)$

9. $1024 \div \left(-\frac{4}{3}\right)$

10. $\frac{11}{3} - \frac{9}{4} + \frac{5}{6}$

11. $52 - 35 \div 7 + 8 \times 2$

12. $(9 + 3) \div 4 + 3^2$

13. $5^2 - 3 \times 4 \div 6$

14. $8(4 + 1) - 10 \div 2$

15. $6 - (3 + 2)^2 + (4 - (20 \div 4))^3 \cdot 3$

Solve each equation.

16. $14m + 8 = 32$
17. $3(31 - 12x) = 82$
18. $-(y + 5) = 2(3y + 1)$
19. $\frac{3}{5}x - 7 = 17$
20. $-5 = \frac{3}{8}(x - 1)$

Student Work Area
Additional paper may be affixed, if necessary.

You will be graded for work shown for EVERY question, so make sure your work is NUMBERED and ORGANIZED.

Student Work Area

Additional paper may be affixed, if necessary.

BASIC SKILLS REVIEW ANSWER SHEET

Directions:
Transfer your final, simplified answers from this section onto the following answer blanks.

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10. _____

11. _____

12. _____

13. _____

14. _____

15. _____

16. _____

17. _____

18. _____

19. _____

20. _____

Georgia GSE Standards Review

A listing of the 8th grade GSE math standards can be found online at the following link:
https://www.georgiastandards.org/Georgia-Standards/Frameworks/8th-Math-Curriculum-Map.pdf

To review and assess your knowledge of these standards, you will complete online assignments using USATestPrep. Use the information on the Activation Card at right to create an account. Once you have an account, you will need to join the **2020 CHS Freshman Summer Math Packet** class. To join the class, click **Join a Class** and search for **Ms. Atkins** in the Teacher drop down box and **2020 CHS Freshman Summer Math Packet** in the Class drop down box.
**When prompted, make sure you add assignments for the class.** The assignments are labeled as

- 2020 FSP Transformations, (4)
- 2020 FSP Exponents, (3)
- 2020 FSP Functions, (8)
- 2020 FSP Systems of Equations (3)
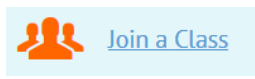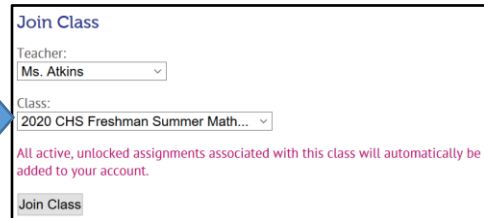
where the quantity in parenthesis indicates the number of 10 question practice sets within each assignment set. Make sure you have a total of **18** assignments loaded to your profile.
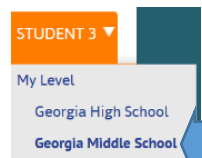
All assignments can be accessed from the **Assignments** tab. You may need to toggle the level to **Georgia Middle School** to see the assignments. Each practice set has 5-10 questions, and you have **UNLIMITED** attempts to improve your score, if necessary. You may retry assignments from the **Graded Work** tab.
Use the Student Work Area in this section of the summer packet to record your work for each problem, to include problems worked from multiple attempts.
Additional paper may be affixed to the packet, if necessary.
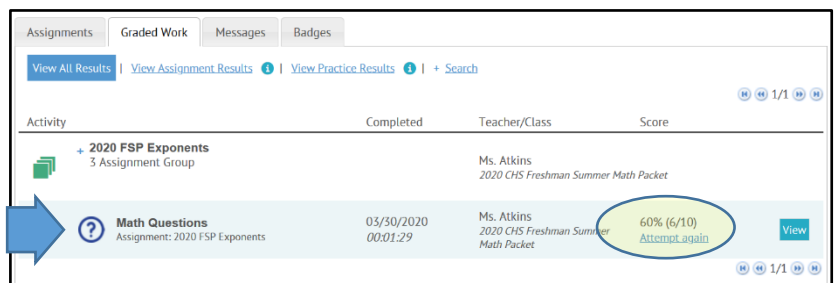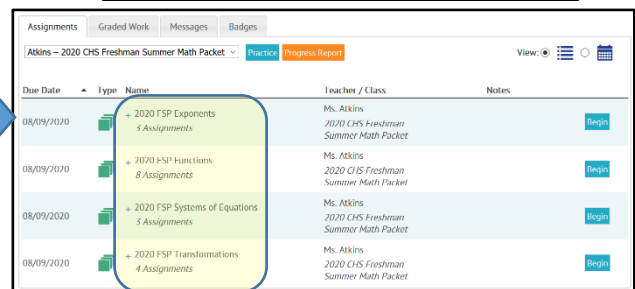
Whereas this packet must be turned in during Freshman Orientation on August 4th, all USATestPrep assignments will be available from now until 11:59 PM EST, August 9th.
Teacher-led 8th grade standards overview sessions will held June 22nd* and June 29th* from 9 AM – 12 PM. See instructions on page 5 to reserve your seat for a review session.
Free, peer-tutoring sessions will also be held in the CHS Math Wing from 1 PM – 3 PM on June 22nd*, June 29th*, and August 3rd*. No reservation is required to attend any tutoring session.
Should you have any questions or if we can be of any assistance, please email Storie Atkins at
Atkins.Storie.L@muscogee.k12.ga.us

* All dates are tentative, pending state and local mandates for school re-openings and building availability.

USATestPrep Student Work Area
Transformations –
You may print this page to show your work or show your work on notebook paper, labeled with the same titles.

USATestPrep Student Work Area
Exponents –
You may print this page to show your work or show your work on notebook paper, labeled with the same titles.

USATestPrep Student Work Area
Functions –
You may print this page to show your work or show your work on notebook paper, labeled with the same titles.

USATestPrep Student Work Area
Systems of Equations –
You may print this page to show your work or show your work on notebook paper, labeled with the same titles.

GSE Performance Task

Rope Climb Design – GPS Performance Task

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

☑ Calculator allowed

Task Objective

In this activity, you will help a playground design team determine how much rope is needed for a rope climbing section of a play set when a varying number of knots is used for the design. To help determine a relationship for the number of knots possible for a given length of rope, you will use collected data to create a table, graph and equation to model this situation. Using your equation, you will make predictions for the number of knots possible in varying lengths of your rope material.

Materials Needed

- Rope or rope-like material, such as shoestring, ribbon, or thick string
- Ruler with cm/mm precision (see Math Tools Appendix, if necessary)

I.   Collect Data

To collect the data for your research, you will need to gather the required materials: a section of rope or rope-like material and a ruler.

1.   When you are ready to begin your research, and before tying any knots in the rope, measure the length of the rope in centimeters (rounded to the nearest tenth) and record the measurement in the table.

2.   Tie one knot in the rope and measure the length of the rope. Continue this process, making sure you do not tie one knot on top of another knot. Complete the table, recording the rope length for up to six knots.

Number of Knots	Length (cm)
0	
1	
2	
3	
4	
5	
6	

II.   Graph Data

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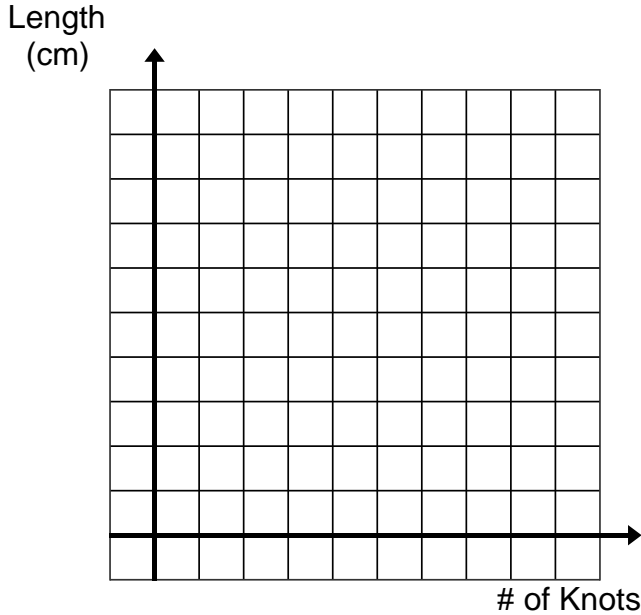
Length
(cm)

# of Knots

4.   a. Based on your graph, predict the minimum length of rope needed to make the following number of knots:

   10 knots   _____

   15 knots   _____

   b. Using complete sentences, explain how you arrived at your predictions.

5.   a. Write a rule that best predicts the number of knots that can be made in a given minimum length of rope, assuming the same type of rope material is used.

Let k = the number of knots and
$L(k)$ = minimum length of rope.

L(k) = _____

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

| k	L(k)
20	
40	
60	

6.   Using your answer for #5a, determine the number of knots possible for a 500 cm piece of rope, assuming the rope is made from the same material.

III.   Data Application

Using the company's most popular brand of rope material, your team determined a rule for a standard length of rope and the number of knots:

$$L(k) = 200 - 12k,$$

where k is the number of knots in the rope and L(k) is the length of rope having k knots.
A graph for L(k) is shown below.

Length of Rope (cm)

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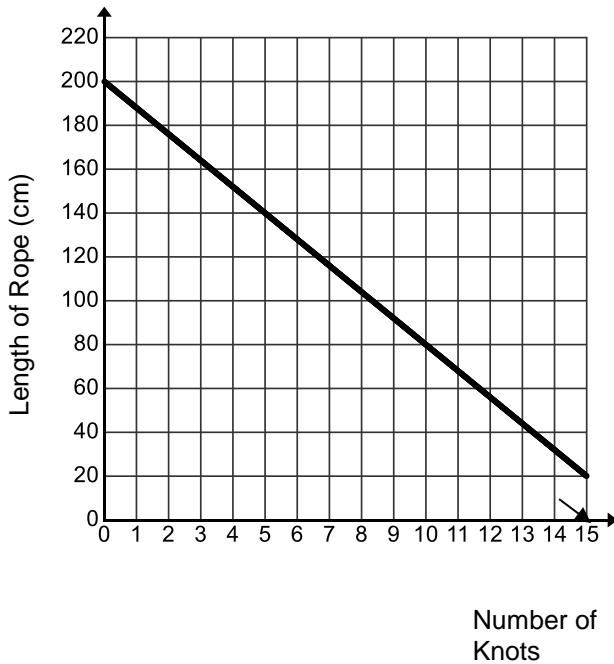
Use the rule and/or graph to complete #7-8.

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

    b. Describe the slope in terms of knots and rope length.

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

    b. Describe the y-intercept in terms of knots and rope length.
   .

IV.   Extension

9.   Sam was building a suspension bridge for the playground at an elementary school and needed some chain link and some rope. He bought a total of 80 feet of materials. The chain link cost $2.00 per foot, and the rope cost $1.50 per foot. He spent a total of $135. How much of each did he buy?

✓ 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.

Assigned variables:

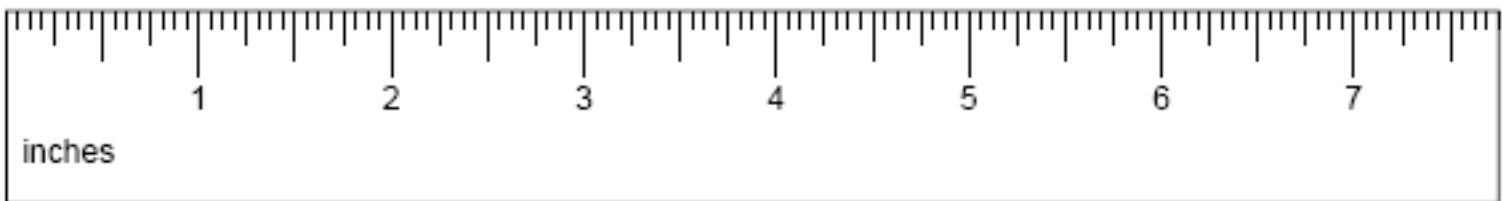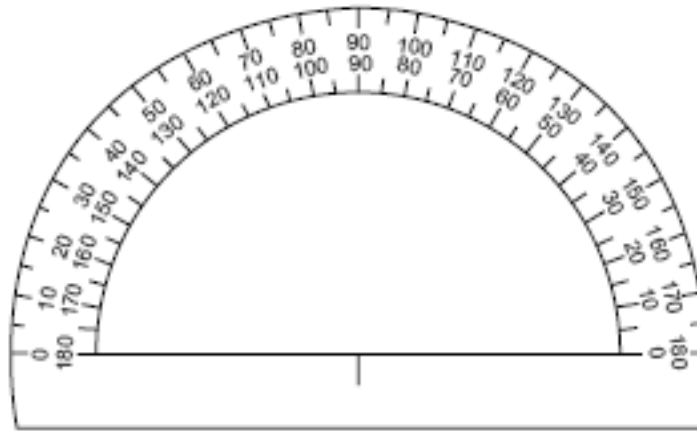Algebraic analysis and solution:

Graphic analysis and solution:

y-axis label : .

x-axis label :
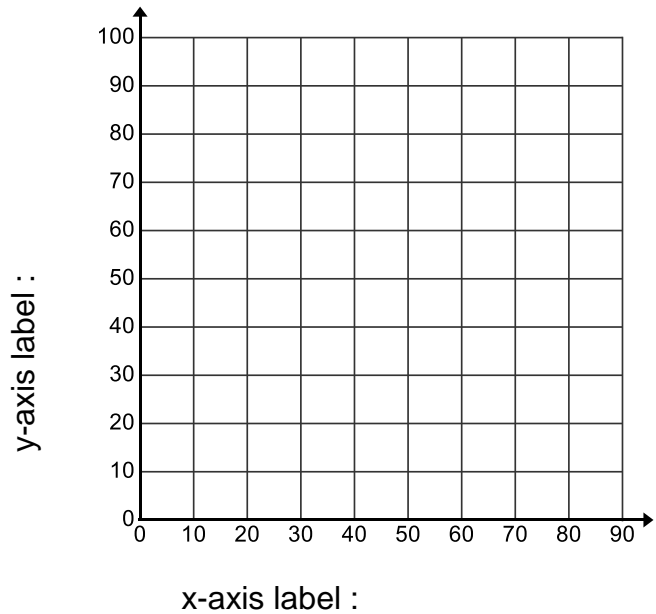
Solution summary:
(using complete sentences)

Math Tools Appendix

A printable copy of a standard ruler can be found at the following website:
www.vendian.org/mncharity/dir3/paper_rulers/

centimeters

inches

If applicable, attach your TI Calculator Rewards HERE

TI Technology
50 POINTS
Rewards Program

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