Name: _____ Date: _____

Ms. Ayinde Math 10: Geometry CC

Geometry Summer Assignment

Directions: Please answer all the following questions and scan the links below. This summer assignment is due by Monday, September 11th.

Welcome to Geometry! In order for me to get to know you guys and to learn what kind of math learner you are please scan and complete the following Google Forms.

Welcome to Geometry!

What Kind of Math Learner Are You?

Before we get into geometry, let's take a moment to review some skills from Algebra 1 that you will need for this course. Scan the accompanying QR codes to get a refresher lesson on the following topics.

Simplifying Radicals

Factoring and Solving

Solving Systems of Equations

Completing the Square

Please complete the following questions.

1. Solve the following systems:
   a. $8x + 9y = 48,\ 12x + 5y = 21$

   b. $8.5c + 7.5j = 299.50,\ 8.5c + 15j = 412$

2. Simplify the following radicals:
   a. $\sqrt{108}$

   b. $\sqrt{84}$

   c. $\sqrt{45}$

   d. $\sqrt{32}$

3. Factor and solve the following problems
   a. $n^2 - 8n + 15 = 0$

   b. $2b^2 - b - 3 = 0$

   c. $p^2 + 15p + 54 = 0$

   d. $3x^2 - 17x + 20 = 0$

4. Complete the square for the following:
   a. $x^2 + 2x - 8 = 0$

   b. $c^2 + 14c - 51 = 0$

Please scan the QR code to the left to get a sense of what geometry is. After watching this video, please answer the questions below.

1. Where does geometry originate?

2. Who is Euclid and what was his contribution to geometry?

3. What are the three main types of geometry we will be discussing this year?

Now that we know the history behind geometry, let's start learning the basic fundamental ideas. Let's begin with Unit 1: Tools of Geometry. Scan the attached QR codes and take notes on the accompanying pages.

1.1: Points Lines and Planes

1.2: Linear Measure

1.3: Midpoint and Distance

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1.1: Points Lines and Planes

Objective: To identify and model points, lines, and planes. To identify intersecting lines and planes.

In geometry, *point*, _____, and *plane* are considered _____ _____ because they are only explained using examples and _____.

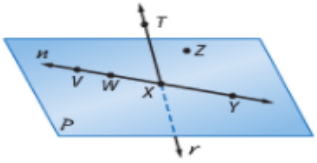
	Point	Line	Plane
Description			
Named By			
Visual			

- Collinear: _____
- Coplanar: _____

Practice:

Use the figure to name each of the following.

a. a line containing point *W*



b. a plane containing point *X*

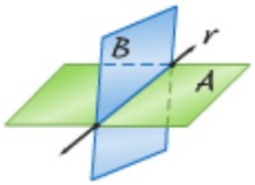
GuidedPractice

1A. a plane containing points *T* and *Z*

1B. a line containing point *T*

- Intersection: _____

P represents the intersection of lines ℓ and m.



Line r represents the intersection of planes A and B.

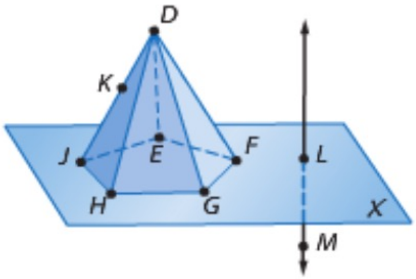
- Space: _____

Practice:

a. How many planes appear in this figure?

b. Name three points that are collinear.

c. Name the intersection of plane *HDG* with plane *X*.



d. At what point do $\overleftrightarrow{LM}$ and $\overleftrightarrow{EF}$ intersect? Explain.

GuidedPractice

Explain your reasoning.

4A. Are points *E*, *D*, *F*, and *G* coplanar?

4B. At what point or in what line do planes *JDH*, *JDE*, and *EDF* intersect?

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1.2: Linear Measure

Objective: To measure segments and to calculate with measures.

- Line Segment: _____

Segment Addition Postulate

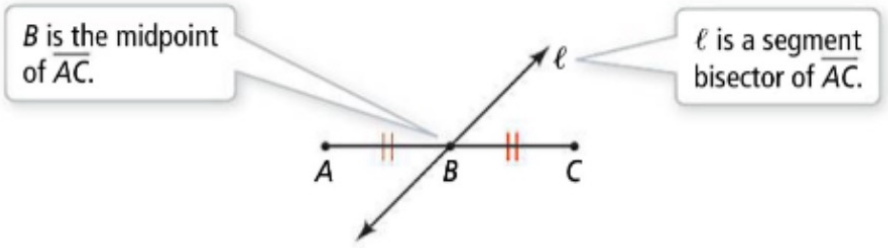
Practice:

Given: $\overline{AB} = 2x - 1$ and $\overline{BC} = 6x + 5$.

a. Using the above diagram and the given information, create an algebraic expression to represent the length of $\overline{AC}$.

b. If $\overline{AC}$ is 36 inches, then what does x equal?

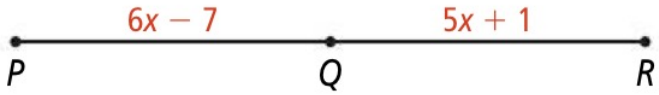
- Congruent: _____



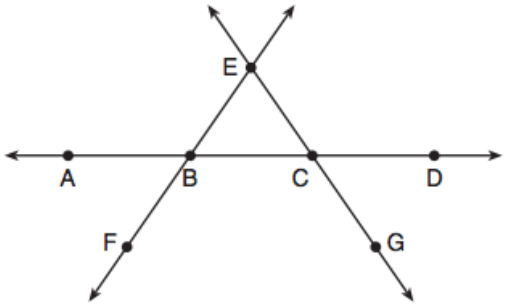
- Midpoint: _____
- Segment Bisector: _____

Practice:

1. Given: $\overline{PQ} \cong \overline{QR}$
   a. Find the value for x.



In the diagram below, $\overleftrightarrow{FE}$ bisects $\overline{AC}$ at B, and $\overleftrightarrow{GE}$ bisects $\overline{BD}$ at C.



Which statement is always true?

(1) $\overline{AB} \cong \overline{DC}$

(2) $\overline{FB} \cong \overline{EB}$

(3) $\overleftrightarrow{BD}$ bisects $\overline{GE}$ at C.

(4) $\overleftrightarrow{AC}$ bisects $\overline{FE}$ at B.

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1.3: Midpoint and Distance

Objective: To find the distance between two points. To determine the midpoint of a segment.

- Distance: _____
- Distance Formula: _____

Practice:

Find the distance between each pair of points.

2A. $E(-5, 6)$ and $F(8, -4)$ **2B.** $J(4, 3)$ and $K(-3, -7)$

- Midpoint: _____
- Midpoint Formula: _____

Practice:

1. Find the coordinates of M, the midpoint of $\overline{ST}$, for S(-6, 3) and T(1, 0).

2. Find the coordinates of the midpoint of the segment with the given coordinates.
   a. A(5, 12), B(-4, 8)

What if... **Find the coordinates of J if $K(-1, 2)$ is the midpoint of $\overline{JL}$ and L has coordinates $(3, -5)$.**

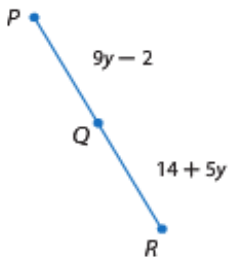
Guided Practice:

Find the coordinates of the missing endpoint if P is the midpoint of $\overline{EG}$.

5A. E(-8, 6), P(-5, 10)

5B. P(-1, 3), G(5, 6)

ALGEBRA **Find the measure of $\overline{PQ}$ if Q is the midpoint of $\overline{PR}$.**



GuidedPractice

6A. Find the measure of $\overline{YZ}$ if Y is the midpoint of $\overline{XZ}$ and $XY = 2x - 3$ and $YZ = 27 - 4x$.

6B. Find the value of x if C is the midpoint of $\overline{AB}$, $AC = 4x + 5$, and $AB = 78$.