

# Mathematics Class Slides

Bronx Early College Academy

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21-25 September 2020

1.1 1st day of Geometry, Segment addition, 21 Sept

1.2 Drawing and construction tools, 23 Sept

1.3 Equilateral triangle construction, 25, 29 Sept

1.5 Angle terminology, 11 Sept

1.6 Angle terminology, quiz review, 12 Sept

1.7 Exam: Algebra, triangle construction, measurement, 13 Sept

## GQ: How do we define the basic elements of geometry?

CCSS: HSG.CO.A.1 Know precise geometric definitions

1.1 Monday 21-22 Sept

Welcome back to school

### Do Now: Algebra skills check

1. Remote learning attendance
2. Take out notebooks (or blank paper)
3. Complete Do Now on Google Classroom

Supply list: Composition book, folder, looseleaf, pencils & pens, compass and ruler, calculator

Lesson: Points, line segments, length; Segment addition postulate

Homework: Begin Khan Academy unit (due Friday)

## Take class notes in a composition book

### Use this notebook format (required)

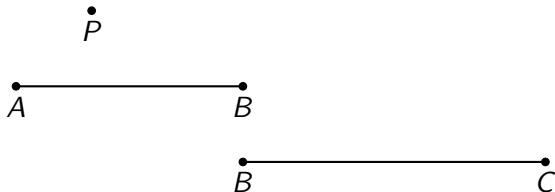
1. In the front, write your name, my contact info, your passwords
2. Each page in the top left corner:
  - First+Last Name
  - 21 September 2020
  - 1.1 Segment addition postulate
3. Copy definitions using your own words
4. Write down example diagrams and problems

Point: a location, a dot, has no size; label with capital letter,  $P$

Line segment: two points and all the points between them; label with *end points* and a bar,  $\overline{AB}$

## Example: Points and line segments

Shown points  $P$ ,  $A$ ,  $B$ ,  $C$ , line segments  $\overline{AB}$ ,  $\overline{BC}$



Given  $AB = 3$ ,  $BC = 4$ .

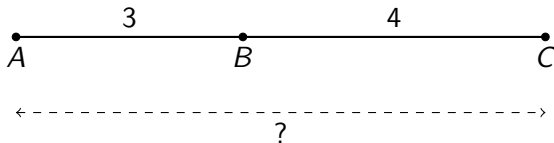
Notation: the length of a line segment is written as the two end points without a bar over them,  $AB$ .

## Example: Points and line segments

### Segment Addition Postulate

Shown *collinear* points  $A$ ,  $B$ ,  $C$ . Given  $AB = 3$ ,  $BC = 4$ .

Find  $AC$ .



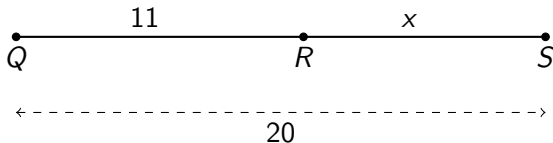
Definition: Points are *collinear* when they lie on a straight line.

## Example 2: Points and line segments

### Segment Addition Postulate

Given collinear points  $Q$ ,  $R$ ,  $S$ , with  $QR = 11$ ,  $QS = 20$ .

Find  $RS$ .



1. How would you check your answer?
2. Which equation represents the situation?

$$11 + x = 20$$

$$x = 20 - 11$$

### Example 3: Segment addition postulate

Given  $\overline{JKL}$ ,  $JK = 2x + 3$ ,  $KL = 5$ ,  $JL = 12$ . Find  $x$ .

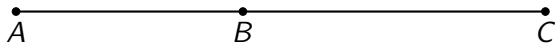


1. Write down an equation to represent the situation.
2. Solve for  $x$ .
3. Check your answer.



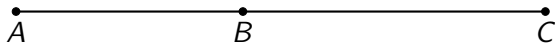
## Example 4: Segment addition postulate

Given  $\overline{ABC}$ ,  $AB = 3x - 7$ ,  $BC = x + 5$ ,  $AC = 14$ . Find  $AB$ .



## Example 4: Segment addition postulate

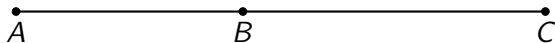
Given  $\overline{ABC}$ ,  $AB = 3x - 7$ ,  $BC = x + 5$ ,  $AC = 14$ . Find  $AB$ .



1. Sketch and label the situation
2. Write a geometric equation
3. Substitute algebraic values
4. Solve for the unknown
5. Answer the question
6. Check your answer

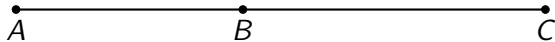
## How do we add lengths? Segment addition postulate

Given  $\overline{ABC}$ ,  $AB = 3x - 7$ ,  $BC = x + 5$ ,  $AC = 14$ . Find  $AB$ .



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1. Sketch and label the situation
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## GQ: How do we construct geometric figures?

CCSS: HSG.CO.A.1 Know precise geometric definitions

1.2 Wedn 23-24 Sept

Do Now: Copy definitions into notebook

Lesson: Definitions: point, line, plane, ray, segment, end point, colinear, coplanar, congruent, distance or length, angle, vertex

Homework review

Practice compass use: "flower of life"

Calculator deposits \$20

Homework: Problem set 1-2 Vocabulary and terminology

## GQ: How do we construct an equilateral triangle?

CCSS: HSG.CO.D.13 Construct an equilateral triangle

1.3 Friday 25, 29 Sept

Do Now:  $x = 0$  vs  $y = 0$ . Copy into notebook, do problems

1.  $x = 0$ , starting point,  $y$ -intercept,  $b$ , initial condition,  $f(0)$
2.  $y = 0$ ,  $x$ -intercept, the solution, the zeros,  $f(x) = 0$

Lesson: Circle notation; “Sketch”, “draw”, “construct”; “Given”

Euclid's first construction

1. Steps in the construction
2. Logic: Why does it work?
3. MLA headings: First+Last Name / Dr. Huson  
10.x Geometry / 9 September 2019
4. Assessment criteria: precision, correct & complete, elegance

Homework: Measurement, terminology, and algebra practice

Due: Compass, ruler, protractor, calculator

## GQ: How do we measure angles?

CCSS: HSG.CO.A.1 Know precise geometric definitions

1.5 Wednesday 11 Sept

Do Now: How big is a football field?

1. On lined scrap paper, calculate the area of a football field
2. 100 yards long,  $53\frac{1}{3}$  yards wide
3. What is the area of the end zone? (10 yards deep)
4. Spicy: What is the area in square feet?

Lesson: Measuring angles, making angles of a given measure

Angle terminology: legs, vertex, interior, exterior, right, acute, obtuse; adjacent, opposite or vertical angles

Homework: Pretest handout, Test Friday

## GQ: How do we measure angles?

CCSS: HSG.CO.A.1 Know precise geometric definitions

1.6 Thursday 12 Sept

### Do Now handout

1. Measuring angles
2. Protractor use
3. Making angles of a given measure

Angle terminology: legs, vertex, interior, exterior, right, acute, obtuse

Review for test tomorrow

Homework: Study for test



## GQ: How do we get started with geometry?

CCSS: HSG.CO.A.1 Know precise geometric definitions

1.7 Friday 13 Sept

### Test: Introduction to geometry

1. Terminology and notation
2. Equilateral triangle construction
3. Measuring length and angles
4. Algebra review

Homework: Angle measure algebra problems