10th Grade Geometry - Unit 7: Analytic Geometry

Bronx Early College Academy

Christopher J. Huson PhD

29 January - 1 March 2019

Seating Chart 10.1

Seating Chart 10.2

7.1 Laptops - Geogebra. Tuesday 28 January

7.2 Linear equations. Wednesday 30 January

7.3 Linear equations. Thursday 31 January (cold day)

7.4 Slope applications in proof. Friday 1 February

7.5 Function translation. Monday 4 February

7.6 Function translation. Wednesday 6 February

7.7 Test. Thursday 7 February

7.8 Financial math, Benjamin Segal. Friday 8 February

7.9 Completing the square. Monday 11 February

7.10 Geogegra transformations intro. Tuesday 12 February

7.11 Circle equations, simplifying radicals. Wednesday 13 February

7.12 Distance proofs. Thursday 14 February

7.13 Review. Friday 15 February

7.14 Triangle midlines, medians. Monday 25 February

7.15 Geogegra median partition 2:1 ratio. Tuesday 26 February

7.16 Analytics pretest review. Thursday 28 February

7.17 Analytic geometry test. Friday 1 March

Seating Chart 10.1

How do we work as a team?

Seating Chart 10.2

How do we work as a team?

GQ: How do we model with digital tools?

CCSS: HSG.CO.D.12 Congruence, geometric constructions 7.1 Tuesday 18 January

Do Now: Regents review and reflection

- Results: 10 passing scores, 4 college ready
- Top score 75; average 53
- 70% earned free response points

GeoGebra Geometry App
Enter N7BHK for 10.1 or P9PNZ for 10.2
Set up account using your real name.
Beginner Tutorials with Lesson Ideas
Author: Tim Brzezinski

Homework: Complete Geogebra

GQ: How do we use functions and equations to represent objects on the coordinate plane?

CCSS: HSG.CO.D.12 Congruence, geometric constructions 7.2 Wednesday 30 January

Do Now: Handout

1. Dilation, plotting equations

Function notation, slope-intercept, standard, & point slope forms of linear equations

Homework: Handout review of linear equations and functions

GQ: How do we use functions and equations to represent objects on the coordinate plane?

CCSS: HSG.CO.D.12 Congruence, geometric constructions 7.3 Thursday 31 January

Do Now: Handout

1. Translation, plotting equations

Function notation, slope-intercept, standard, & point slope forms of linear equations

Homework: Handout review of linear equations and functions

GQ: How do we use slope in geometric proof?

CCSS: HSG.CO.D.12 Congruence, geometric constructions 7.4 Friday 1 February

Do Now: Handout

1. Translating segments, plotting equations, perpendicular proof

Applying slope to prove parallel or perpendicular relationships

Homework: Handout review of linear & quadratic equations and functions

GQ: How do we apply translations to functions?

CCSS: HSG.CO.D.12 Congruence, geometric constructions 7.5 Monday 4 February

Do Now: Handout

1. Translating segments, plotting equations, perpendicular proof

Translating parabolas, vertex form

Homework: Pretest for review Wednesday. Test Thursday

GQ: How do we apply translations to functions?

CCSS: HSG.CO.D.12 Congruence, geometric constructions 7.6 Wednesday 6 February

Do Now: Handout

1. Translating segments, plotting quadratics

Translating parabolas, vertex form

Homework: Study for test tomorrow

GQ: How do we apply translations to functions?

CCSS: HSG.CO.D.12 Congruence, geometric constructions 7.7 Thursday 7 6 February

Assessment: Unit Test

Homework: Financial Mathematics handout

GQ: How do we use mathematics in business?

CCSS: MP. 4 Modeling with mathematics 7.8 Friday 8 February

Welcome guest instructor Mr. Segal, Neuberger Berman

Do Now: Answer these questions in your notebook

1. How much profit does Apple make on each i-phone it sells? (approximately)
2. Do they make more on an i-phone, i-pad, or Mac computer?
3. Is Apple stock a good investment? Justify your answer.

Lesson: Modeling the financial results of Apple Inc.

Homework: Practice problems

GQ: How do we apply translations to functions?

CCSS: HSG.CO.D.12 Congruence, geometric constructions 7.9 Monday 11 February

Geogebra project: Handout

1. Right triangles' side lengths satisfy $a^2 + b^2 = c^2$
2. Pythagorean triples are integers that satisfy $a^2 + b^2 = c^2$

	3, 4, 5	5, 12, 13
6, 8, 10	8, 15, 17	7, 24, 25

Homework review, the equation of a circle
Lesson: Completing the square, efficient algebra techniques

Homework: Practice problems handout

GQ: How do we apply translations to functions?

CCSS: HSG.CO.D.12 Congruence, geometric constructions 7.10 Tuesday 12 February

Geogebra project: Create a transformations puzzle problem

1. Start with a polygon
2. Use Geogebra's tranformations tools
3. List the transformation steps you used
4. Rubric: correct, aesthetics, MLA
5. Print out a color pdf to email me. (husonbeca@gmail.com)

Lesson: Geogebra tool pallette

Homework: Practice problems

GQ: How do we work with radicals?

CCSS: HSG.CO.D.12 Congruence, geometric constructions 7.11 Wednesday 13 February

Do Now: Complete the square by adding a constant, then factor as a binomial squared

1. Example: $x^2 + 6x \rightarrow$ $x^2 + 6x + 9 = (x + 3)^2$
2. $x^2 + 10x \rightarrow$
3. $x^2 + 12x \rightarrow$
4. $x^2 - 8x \rightarrow$

Simplify radicals: $\sqrt{12}$
Lesson: Completing the square, circles p. 798, simplifying radicals
Classwork: Textbook problems 9-35 odds p. 801

Homework: Practice problems handout

GQ: How do we use distance in proofs?

CCSS: HSG.CO.D.12 Congruence, geometric constructions 7.12 Thursday 14 February

Do Now Quiz

1. Operations on the coordinate plane
2. Applications of slope, graphing linear equations
3. The equation of a circle, deriving center and radius

Lesson: Completing the square, efficient algebra techniques

Homework: Practice problems handout

GQ: How do we use algebra in geometry problems?

CCSS: HSG.CO.D.12 Congruence, geometric constructions 7.13 Friday 15 February

Do Now Quiz

1. Operations on the coordinate plane
2. Applications of slope, graphing linear equations
3. The equation of a circle, deriving center and radius

Lesson: Completing the square, efficient algebra techniques

Homework: Practice problems handout

GQ: How do we use triangle midlines?

CCSS: HSG.CO.D.12 Congruence, geometric constructions 7.14 Monday 25 February

Do Now Analytic geometry review

1. Point-slope form of linear equations
2. Applications of slope, graphing linear equations
3. The equation of a circle, deriving center and radius

Lesson: Midlines, medians, the centroid. Measuring with Geogebra, submissions standards

Homework: Practice problems handout

GQ: How do we use technology to explore geometric relationships?

CCSS: MP5 Use appropriate tools strategically: dynamic geometry software 7.15 Tuesday 26 February

Do Now: Practice analytic geometry skills on handout

Lesson: Geogebra project to measure the division of a median of a triangle by the centroid

1. Start with a triangle, connect two midpoints and medians, intersecting at the centroid
2. Use Geogebra's measurement tools
3. Explain the resulting 2:1 ratio using text and symbols
4. Assessment rubric: correct, aesthetics, MLA
5. Print out a color pdf to email me. (husonbeca@gmail.com)

Homework: Pretest packet due Thursday (test Friday)

GQ: How do we apply algebra to geometric situations?

CCSS: HSG.CO.D.12 Congruence, geometric constructions 7.16 Thursday 28 February

Do Now Analytic geometry review

1. Point-slope form of linear equations
2. Applications of slope, graphing linear equations
3. The equation of a circle, deriving center and radius

Lesson: Pretest packet homework review

Homework: Study for test tomorrow

GQ: How do we apply translations to functions?

CCSS: HSG.CO.D.12 Congruence, geometric constructions 7.17 Friday 1 March

Assessment: Unit Test

Homework: Coordinate geometry handout

GQ: How do we use technology to explore geometric relationships?

CCSS: MP5 Use appropriate tools strategically: dynamic geometry software 7.19 Tuesday 6 March

Do Now: Practice analytic geometry skills on handout

Lesson: Geogebra project to measure the division of a median of a triangle by the centroid

1. Start with a triangle, connect two midpoints and medians, intersecting at the centroid
2. Use Geogebra's measurement tools
3. Explain the resulting 2:1 ratio using text and symbols
4. Assessment rubric: correct, aesthetics, MLA
5. Print out a color pdf to email me. (husonbeca@gmail.com)
6. Filename: Last-First$_T$*itle.png*, *emailsubjectline&message*

Parent conferences this Thursday evening, Friday afternoon

Homework: