Pre-AP Geometry Polygons and Algebra Unit

Wed-Thurs, February 20-21 (ASPIRE AND ACT DAY WED, 15 min classes)

Objective: I can discover and apply polygon sum theorem.

* Investigation on board: put diagonals from one vertex of different polygons and count the degrees of the triangles formed, which is equal to the sum of the interior angles of the polygon. C-31. Sum of the interior angles of a polygon with n sides is 180(n-2).
* In 4th, 0B, and 6th – Give vertices of a quadrilateral, find the slopes of the sides. What is it?
* In 4th, OB, and 6th – intro/exposure to the idea behind the Law of Cosines, always on the ACT. Use 3 triangles: 7,24,24, 7,24,25 7,24,26. Acute, right, obtuse. So c2 = a2 + b2 + or – a little extra to get obtuse or right.
* HW #13 – p 264:1-9, 12-13

Fri-Mon, February 22, 25, 2019

Objective: I can construct definitions of quadrilaterals and identify them. I can discover and apply conjectures about exterior and interior angles of polygons.

* Pp 60-61 in textbook: work with partner to construct definitions and sketches for trapezoid, kite, parallelogram, rhombus, rectangle, and square (in Geometric Truth).
* In some classes: take a grade on HW #13 – 4 pts
* Add to HW: p 265: 11, 14
* Go over HW #13, warm-up, add-on to HW, and definitions. Adjust your definitions, particularly “kite” – a quadrilateral with two distinct pairs of consecutive congruent sides.
* Mathopenref – demonstration of exterior angles – what is a set of exterior angles, total degrees of exterior angles (one set) is always 360. What is one in a regular? How do you get it? What is one interior angle in a regular? Multiple ways to get it.
* How are these two different expressions the same for one interior angle in an equiangular polygon?
* Write up C- 31, 32, 33 from pp 263-269, using sketches from board.
* Intro to unit. Issues with ACTM. Make-up issues
* HW #14: p 269-70:1-10, p 63: 2-12.
* View tests in some classes

Quiz Mon-Tues, March 5-6, 2019 – 30 pts (5.1-3)

Tues-Wed, February 26-27, 2019

Objective: I can discover, prove, and apply kite and trapezoid definitions and properties.

* Warm-up: in GT, define “isosceles trapezoid” from p 277 and copy the sketch and labels from the board. Improve your sketch of “kite” by adding the expressions with arrows: “non-vertex angles” and “vertex angles”
* Fill-in-the-blank proofs on screen: C-34 – Non-vertex angles of a kite are congruent. C-37 – The vertex angles of a kite are bisected by a diagonal.
* Take a grade on HW #13 and #14 – 4 ea.
* Go over warm-up and HW, questions? How to look at sketches and connect to conjectures (What do I know vs What do I do?)
* Discussion: deductive explain with input why the diagonals of a kite are perpendicular, and that only one of the diagonals is a perpendicular bisector of the other. Tools to write up C-36-37 The diagonals of a kite are perpendicular. The diagonal connecting the vertex angles of a kite is a perpendicular bisector of the other diagonal.
* Class questioning: trapezoid properties: C-38 – Consecutive angles between bases of a trapezoid are supplementary. Isosceles trapezoid properties – C-39 Pairs of base angles of an isosceles trapezoid are congruent. C-40 (will prove in homework) – diagonals of an isosceles trapezoid are congruent. And C-52 from p 306 – The midsegment of a trapezoid is parallel to the bases and its length is half the sum of the bases. Write up through C-40 and C-52.
* HW #15: pp 307:6-7, p 278: 1-8, 11-13, 20.

Quiz March 5-6 – 5.1-3 – 30 pts

Thursday-Friday, February 28-March 1, 2019

Objective: I can discover, prove, and apply parallelogram definition and properties.

* ACTM announcements
* Warm-up: Given 4 vertices, find slopes of sides and determine type of quadrilateral.
* Warm-up: p 271:17 – prove diagonals of isosceles trapezoid are congruent
* Take a grade on HW #15 – 4 pts
* Answers to warm-ups and homework. Questions.
* Warm-up: Fill in the Blank proof of C-41 and C-43 – opposite sides and angles of a parallelogram are congruent. (Get from neighbor).
* Discuss C-42 and why we should already know that consecutive angles in a parallelogram are supplementary.
* Fill-in-the-blank proof of C-44 – diagonals of a parallelogram bisect each other (share a midpoint). See notes.
* HW #16 – pp 284-6: 1-6, 14. Catch up GT through C-44.
* Quiz Monday-Tuesday on 5.1-3. Topics on daily post on website. About 30 pts. It will contain True/false, direct quotes from conjectures, find-the-angles and sides, one algebra problem, slope formula.

Test Thursday-Friday, March 14-15.

Tues-Wed, March 5-6, 2019

Objective: I can prove and apply rectangle, rhombus, and square properties. I can demonstrate mastery over Polygon Sum Theorems and Kite and Trapezoid definitions and properties.

* Warm-up: given name of polygon: number sides, interior angle sum, one angle if equiangular. Also another 4 vertices of a quad to find slopes of sides and interpret.
* Practice worksheet: applying trapezoid, kite, and midsegment properties. Self-check.
* Take a grade on HW #16 – 4 pts
* Questions over warm-up and HW. Where from here to the test and how will we get there: proof, slope, distance, midpoint, what figure and why, what must I be, what could I be given properties of a quadrilateral.
* Prove: diagonals of a rectangle are congruent. Diagonals of a rhombus bisect the angles of the rhombus.
* Quiz 5.1-3 – 31 pts
* HW #17 – pp 292-3: 1-16. On 14-16, use counted slopes to justify your answer. On 1-10: answers always, sometimes, or never true, sketch or explain your answer.
* Grade next time – 5 pts – Geometric Truth all caught up: definitions from pp 60-61. Conjectures from 31-44,46-49, 52 (first is on p 263, last is on p 306)

Unit Test – Thurs-Fri, March 14-15, 2019

Thurs-Friday, March 7-8, 2019

Objective: I can prove type of quadrilateral using slope and distance and midpoint. I can prove rectangle and rhombus properties.

* Warm-up: Given 4 vertices, find slopes of sides and determine type of quadrilateral (2 big problems).
* Warm-up: T/F based on A/S/N. Self-check.
* Take a grade on HW #17 – 4 pts Grade Geometric Truth – 5 pts.
* Fill in the blank proof on board: Rectangle diagonals and rhombus diagonals.
* Go over HW and warm-ups.
* Worksheet – algebra of angles, self check
* HW #18 – B day – p 308:9-10 (show work) and pp 285-6: 9, 15, 16
* HW #18 – A day – p 285: 15, p 308: 9-10, 20-21, pp 311-13:2,8-14, 15 + proof sheet

Test on Thurs-Fri next week. Test will be about 80 pts.

Monday, March 11, 2019 – B day

Objective: I can properties and definitions of quadrilaterals to solve a problem or establish a proof.

* Warm-up on board: algebra/properties/solve equations
* Answers/questions to HW #18a
* Algebra: writing equations of lines in point/slope form.
* Algebra proof: slope/distance/midpoint
* View quizzes/make-up issues
* HW #18b: p 310:10-11, pp 311-313: 2, 8-14, 16 PLUS Fill-in-the-blank proof of rhombus diagonals perpendicular bisect each other.
* Take grades (5 pts) on Geometric Truth

Unit Test Thurs-Fri – about 90 pts

Study Session at 8 am on Thursday.

Tues-Wed, March 12-13, 2019

Objective: I can apply properties and definitions of quadrilaterals to prove and solve.

* Warm-up: Multiple Choice/ T/F practice
* Self-check warm-up
* 2nd warm-up on screen: Always/Sometimes/Never and What Must it Be, What Could it Be?
* Take a grade over HW #18 – 6 pts
* Take grades over Geometric Truth – 5 pts
* Go over warm-up and HW #18. KNOW YOUR CONJECTURES AND DEFINITIONS!! Make lots of sketches!!
* Algebra Practice – proof with slope/distance/midpoint. (On B day includes equations of lines).
* Pass out Study Guide – have someone read the first paragraph aloud!
* Return Quizzes
* Pass out worksheet HW #19 with textbook problems also noted on the sheet.

Test Thurs-Fri, March 14-15.

Thurs-Fri, March 14-15, 2019

Objective: I can demonstrate mastery over polygon sums, quadrilateral properties, slope, distance, midpoint, equations of lines, and quadrilateral proofs.

* Go over HW #19, questions.
* Unit Test – 90 pts