

The Common Denominator

A Family Math Newsletter

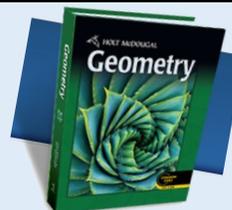
Geometry Unit 6: Properties and Attributes of Triangles



Unit at a Glance

Special segments within a triangle such as the angle bisector, perpendicular bisector, median, altitude, and midsegment allow us to construct points of concurrency. Students will use these segments to construct the circumcenter, the incenter, the centroid, and the orthocenter. This unit investigates the process of an indirect proof using inequalities within one triangle as the focus of the proof. Students will develop an understanding of inequalities in two triangles as they analyze the Hinge Theorem. Students work with the Pythagorean Theorem to find distances including properties of special right triangles. The following topics will be studied:

Topic	Length	Geometry Textbook Section(s)
Topic A: Perpendicular Bisectors and Angle Bisectors	Academic: 1 (90-minute) lesson Honors: 2 (90-minute) lessons	5.1
Topic B: Bisectors of Triangles	Academic: N/A (90-minute) lesson Honors: 2 (90-minute) lessons	5.2
Topic C: Medians and Altitudes of Triangles	Academic: N/A (90-minute) lesson Honors: 2 (90-minute) lessons	5.3
Topic D: The Triangle Midsegment Theorem	Academic: 1 (90-minute) lesson Honors: 1 (90-minute) lesson	5.4
Topic E: Inequalities in One Triangle	Academic: 1 (90-minute) lesson Honors: 1 (90-minute) lesson	5.5
Topic F: Inequalities in Two Triangles	Academic: N/A (90-minute) lesson Honors: 1 (90-minute) lesson	5.6
Topic G: The Pythagorean Theorem	Academic: 1 (90-minute) lesson Honors: 1 (90-minute) lesson	5.7
Topic H: Applying Special Right Triangles	Academic: 2.5 (90-minute) lessons Honors: 2.5 (90-minute) lessons	5.8



Resource Toolkit

Homework Help

Digital resources exist in the HMH online textbook that can support student learning outside of the classroom. To access these resources, students can log into HMH through BCPSone Digital Content, then select “Student Resources”. The “Homework Helper” resource has a mini-lesson, then guided practice problems for students to complete that can help reinforce concepts that were learned in class. Also, check the “Videos & Activities” section where other beneficial resources can be found.

Khan Academy Videos

Topic A: [Perpendicular Bisectors & Angle Bisectors](#)

Topic G: [Pythagorean Theorem](#)

Topic H: [Special Right Triangles](#)

Exploring Mathematics

Real World Connections

Discuss the following real-world situations with your student. Ask your student to describe how they solved the problem by using the Pythagorean Theorem.

Painting on a Wall: Painters use ladders to paint on high buildings. The painter needs to determine how tall a ladder needs to be to safely place the base away from the wall, so it won't tip over. In this case the ladder itself will be the hypotenuse. A painter must paint a wall which is about 3 meters high. The painter must put the base of the ladder 2 meters away from the wall to ensure it won't tip. What should be the length of the ladder required by the painter to complete his work?

What Size TV Should You Buy? T.V. sizes are generally advertised based on the length of its diagonal. Mr. James saw an advertisement for a T.V. in the newspaper where it is mentioned that the T.V. was 16 inches high and 14 inches wide. Calculate the diagonal length of its screen.

Road Trip: Two friends are meeting at a playground. Mary is already at the park, but her friend Jamal needs to get there taking the shortest path possible. Jamal has two ways he can go. He can follow the roads getting to the park by first heading south three miles, then heading west four miles. The other way he can get to the park is by cutting a diagonal path. What is the shortest path that Jamal would travel? How do you know?

“Change will not come if we wait for some other person or some other time. We are the ones we've been waiting for. We are the change that we seek.”

– Barack Obama