

Eureka Math Parent Guide

A GUIDE TO SUPPORT PARENTS AS THEY WORK WITH THEIR STUDENTS IN MATH.

GRADE 7
MODULE 6

GRADE FOCUS

Seventh grade mathematics is about (1) developing understanding of and applying proportional relationships; (2) developing understanding of operations with rational numbers and working with expressions and linear equations; (3) solving problems involving scale drawings and informal geometric constructions, and working with two- and three-dimensional shapes to solve problems involving area, surface area, and volume; and (4) drawing inferences about populations based on samples.

- Module 1: Ratios and Proportional Relationships
- Module 2: Rational Numbers
- Module 3: Expressions and Equations
- Module 4: Percent and Proportional Relationships
- Module 5: Statistics and Probability

» Module 6: Geometry

LET'S CHECK IT OUT!

MODULE 6 FOCUS

In this final module of 7th grade, students explore several geometry topics they have been developing over the years such as angles, area, surface area, and volume in the most challenging form students have experienced yet. This module assumes students understand the basics; the goal is to build a fluency in these difficult problems. The remaining topics (i.e., working on constructing triangles and taking slices (or cross sections) of three-dimensional figures) are new to students.

MORE SPECIFICALLY, CHILDREN WILL LEARN HOW TO:

- Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.
- Describe the two-dimensional figures that result from slicing three-dimensional figures, as in plane sections of right rectangular prisms and right rectangular pyramids.
- Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure.
- Solve real-world and mathematical problems involving area, volume, and surface area of two and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.

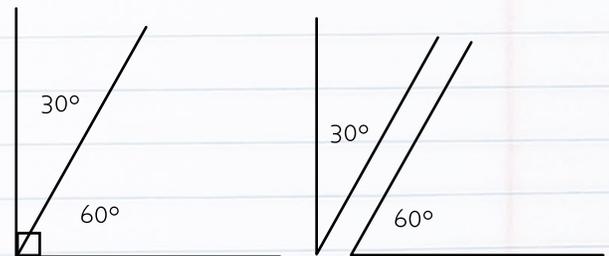
TOPIC OVERVIEW

Topics are the lessons within a module that help children master the skills above. Here are the lessons that will guide your child through Module 6:

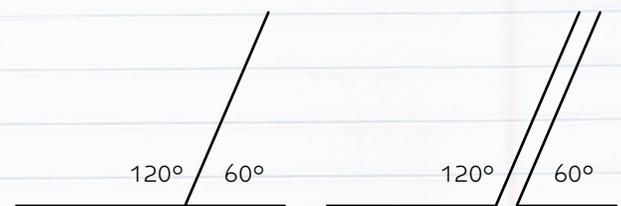
- Topic A: Unknown Angles
- Topic B: Constructing Triangles
- Topic C: Slicing Solids
- Topic D: Problems Involving Area and Surface Area
- Topic E: Problems Involving Volume

WORDS TO KNOW

- **Complementary Angles:** When two angles are complementary, the measurements have a sum of 90° .



- **Supplementary Angles:** When two angles are supplementary, the measurements have a sum of 180° .

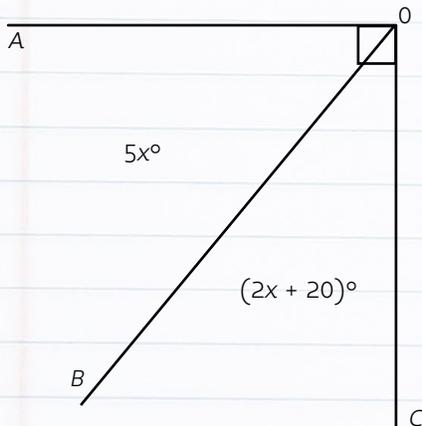


SAMPLE PROBLEMS

SAMPLE 1

Geometry & Algebra

In a complete sentence, describe the relevant angle relationships in the diagram. Set up and solve an equation to find the value of x . Find the measurements of $\angle AOB$ and $\angle BOC$.



Solution:

$\angle AOB$ and $\angle BOC$ are complementary and sum to 90 degrees.

$$5x + (2x + 20) = 90$$

$$7x + 20 = 90$$

$$7x = 70$$

$$x = 10$$

$$\angle AOB = 5(10) = 50 \text{ degrees}$$

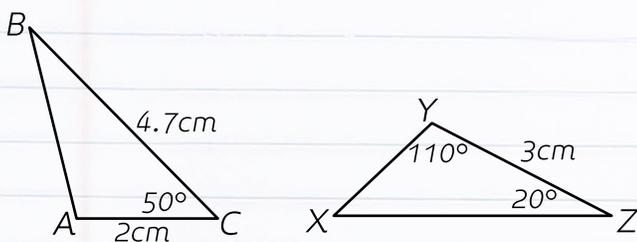
$$\angle BOC = 2(10) + 20 = 40 \text{ degrees}$$

SAMPLE 2

Identical Triangles

*Sample problem from the curriculum.

The triangle on the right are identical and have the correspondence $\triangle ABC \leftrightarrow \triangle YZX$. Find the measurements for each of the following sides and angles.



Solution:

$$AB = \underline{\hspace{2cm}} \qquad AB = 3cm$$

$$BC = \underline{\hspace{2cm}} \qquad XZ = 4.7cm$$

$$\underline{\hspace{2cm}} = XY \qquad 2cm = XY$$

$$\angle A = \underline{\hspace{2cm}} \qquad \angle A = 110^\circ$$

$$\angle B = \underline{\hspace{2cm}} \qquad \angle B = 20^\circ$$

$$\underline{\hspace{2cm}} = \angle X \qquad 50^\circ = \angle X$$

SAMPLE 3

Exploring Triangles!

Try making a triangle with segments that are 4cm, 10cm, and 5cm in length. What happens? What does this tell us about the length of the sides of a triangle?

HOW YOU CAN HELP AT HOME

- Every day, ask your child what they learned in school and ask them to show you an example.
- Ask your child to create an example of something that is certain to happen and another event that is impossible. For example, if there is a bag containing only five red crayons and you reached your hand in to grab a crayon, it is certain you will pull out a red crayon and impossible that you will pull out a blue crayon.
- Discuss the importance of random sampling in probability.