Unit 4: Quirky Quadrilaterals

Unit 4 Overview

In this unit students will learn about several different types of special quadrilaterals. First they will learn what defining characteristics each has and then relate them all via a quadrilateral hierarchy. Next they will learn about special properties each figure has. Finally, they will use this knowledge along with the DERA problem-solving process to find missing side lengths and/or angle measures.

Day 1—Lesson 4.1

Objective(s):

Skills attained:

Students will learn the definitions of several special types of quadrilaterals. They will then relate these to each other via a quadrilateral hierarchy.

Topics:

Defining specials types of quadrilaterals
Quadrilateral hierarchy (quadrilateral relationships)

Vocabulary:

Trapezoid
Isosceles trapezoid
Parallelogram
Kite
Line of symmetry
Rhombus
Rectangle
Square

Description:

See Lecture Support for discussion tips on PowerPoint Slides.

Lecture Support:

Make sure students understand the relationships among the different types of quadrilaterals. Also make sure they can use the quadrilateral hierarchy to decide whether statements like the following are true or false:

1. All squares are rectangles
2. Since it is a property of a kite it is also a property of a rhombus

Their ability to answer these types of questions will make their understanding of the properties of these figures more complete and easier to apply and remember.

Wrap-up:

Homework:

Exercise Set 4.1

Day 2—Lesson 4.2

Objective(s):

Skills attained:

Students will learn several properties related to the sides and angles of trapezoids. They will use these properties with algebra skills to solve equations to find angle measures and/or side lengths.

Topics:

Properties of trapezoids and isosceles trapezoids

Vocabulary:

Isosceles trapezoid
Bases
Base angles
Non-base angles
Consecutive (angles)
Opposite (angles or sides)

Description:

Answer questions from Exercise Set 3.1
See Lecture Support for discussion tips on PowerPoint Slides.

Lecture Support:

Encourage students to use DERA when working problems where they have to find the value of an unknown or the measure of an angle or side length. As always, all work in solving an equation should be shown.

Wrap-up:

Homework:

Exercise Set 4.2