Name _____ Date _____

***Ready*® Mathematics**

Lesson 31A Quiz

Solve the problems.

1 The table below shows some properties of shapes.

Properties of Shapes
At least 2 sides of equal length
At least 1 right angle
2 pairs of parallel sides

Which shapes always have all of the properties shown in the table?

Circle all the correct answers.

A squares

B right triangles

C rectangles

D isosceles triangles

E trapezoids

F parallelograms

2 Fill in the blanks to correctly complete each statement.

a. All closed plane figures with 3 or more sides are polygons, and quadrilaterals are closed plane figures with 4 sides, so all quadrilaterals are _____.

b. All quadrilaterals with 2 pairs of parallel sides are parallelograms, and rectangles have 2 pairs of parallel sides, so all rectangles are _____.

c. All squares have 4 right angles, and all parallelograms with 4 right angles are rectangles, so all squares are _____.

d. All rhombuses have 4 sides of equal length, and squares are rhombuses, so all squares have _____ sides of _____ length.

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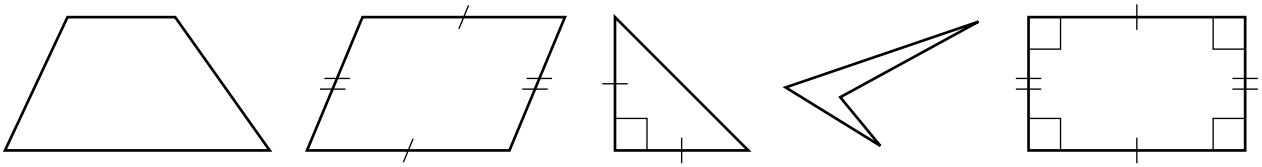
Lesson 31A Quiz continued

3 Classify the shapes shown below. Sides that are the same length are marked with a slash. Write the letter of each shape in the category that describes it. Shapes may fall into more than one category. Not all shapes will be used.



A B C D E

At Least 1 Pair of Perpendicular Sides	At Least 2 Sides of Equal Length	At Least 1 Pair of Parallel Sides

4 Rachel says that an equilateral triangle is always an acute triangle, but an acute triangle is never an equilateral triangle.

Which statement best explains whether Rachel is correct or not?

A Rachel is correct because an equilateral triangle has three sides of equal length, and an acute triangle has three sides of different lengths, so an acute triangle can never be an equilateral triangle.

B Rachel is correct because an equilateral triangle has three acute angles, and an acute triangle has one acute angle, so an acute triangle cannot be an equilateral triangle.

C Rachel is not correct because equilateral triangles are acute triangles that have three sides of equal length, so an acute triangle can sometimes be an equilateral triangle.

D Rachel is not correct because equilateral triangles have three acute angles, and acute triangles have three acute angles, so all acute triangles are equilateral triangles.