MAT 222-840 **Discussion Questions for Chapter 6** Spring 2017

Due: 3/7/17 at 5:00PM

Instructions: Your answers to the following questions do not need to be lengthy or written in complete sentences, but should reflect preparation for our discussion about Chapter 6 at the beginning of class.

Questions:

1. How can you use triangles to remember the sum of the measures of the interior angles of any convex quadrilateral?

   The sum of the measures of the interior angles of any convex quadrilateral is 360° because a diagonal of the quadrilateral divides it into two triangles, each of which has an angle sum of 180°.

2. If consecutive angles of a parallelogram are congruent, what can you conclude about the parallelogram? Explain your reasoning

   The parallelogram must be a rectangle. Consecutive angles of a parallelogram are supplementary. If two angles are both congruent and supplementary, they must both be right angles, so the parallelogram will have four right angles, which makes it a rectangle.

3. What are 6 ways to prove that a quadrilateral is a parallelogram?

   - *Both pairs of opposite sides are parallel. (definition of parallelogram).*
   - *Both pairs of opposite sides are congruent.*
   - *An angle is supplementary to both of its consecutive angles.*
   - *Both pairs of opposite angles are congruent.*
   - *The diagonals bisect each other.*
   - *One pair of opposite sides is congruent and parallel.*

4. What is the common name for a "rectangular rhombus?

   a square

5. In what type of parallelogram do congruent diagonals bisect each other?

   a rectangle

6. In what type of trapezoid are the two legs congruent to each other and the two base angles congruent?

   an isosceles trapezoid

7. What do the diagonals of an isosceles trapezoid and a rectangle have in common?

   the diagonals are congruent

8. What do the diagonals of a kite and a rhombus have in common?

   the diagonals are perpendicular

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Muddiest Point:

What questions do you have about the notes you took in Chapter 6, or anything from this week?

MML Homework Questions:

Are there any MML homework problems from Chapter 6 that you would like to discuss?