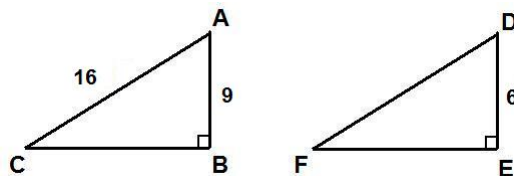


University of South Carolina
Math 222: Math for Elementary Educators II
Instructor: Austin Mohr
Section 002
Fall 2010

Quiz 2 (Version 2)

Due Wednesday, December 8

2. Determine which, if any, of the following congruence rules are true for quadrilaterals. If they are true, argue why you think they are true. If they are false, draw a pair of quadrilaterals (using a protractor and ruler) satisfying the rule but failing to be congruent.
 - a. AAAA
 - b. SAAA
 - c. SAAAA
 - d. SSSSA
3. A *diagonal* of a quadrilateral is a line segment connecting opposite vertices (so every quadrilateral has exactly two diagonals).
 - a. Prove that the diagonals of a rectangle have equal length.
 - b. Prove that the diagonals of a square divide the square into four congruent isosceles triangles. (Hint: Remember that the diagonals also bisect each other.)
4. Solve for all missing sides and angles given that the two triangles below are similar and oriented the same way (so \overline{AB} really is associated with \overline{DE}). You may *not* use the Pythagorean Theorem.



5. Two different companies charge different amounts for service. Company A charges a \$350 activation fee and \$50 per month. Company B charges a \$200 activation fee and \$80 per month.
 - a. Write two equations (one for each company) to describe the cost of using their services. Be sure to specify what your x and y mean.

- b.** Sketch the graph of your two equations together on the same set of axes.
- c.** Where do the lines intersect? What is the meaning of this point in context?
- d.** Compare the prices for one year of service from each of the companies.