## MATH 161 SAMPLE MIDTERM EXAM

## 2014 MAY 5

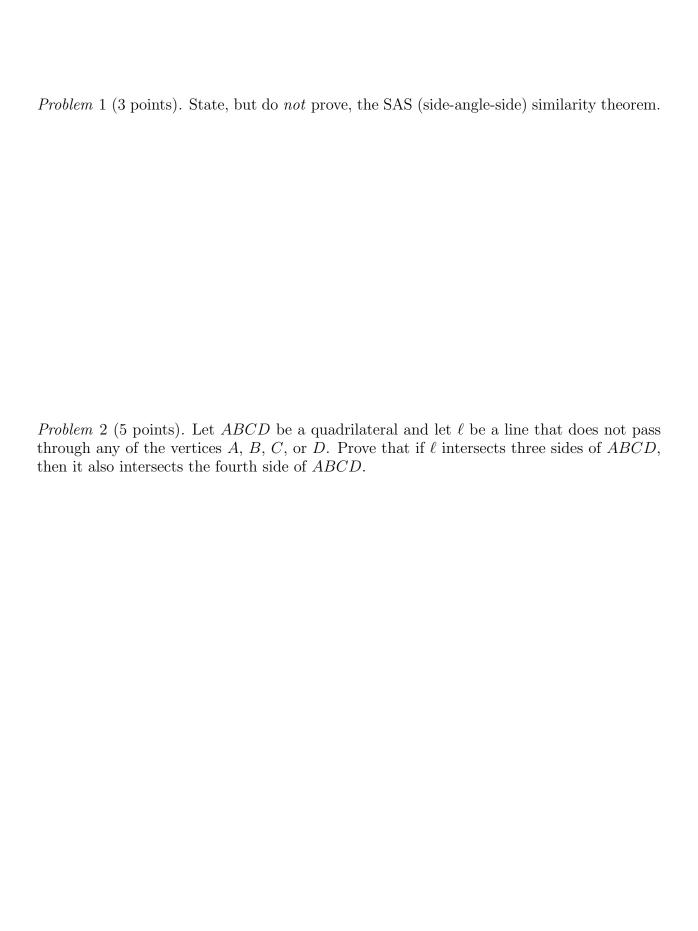
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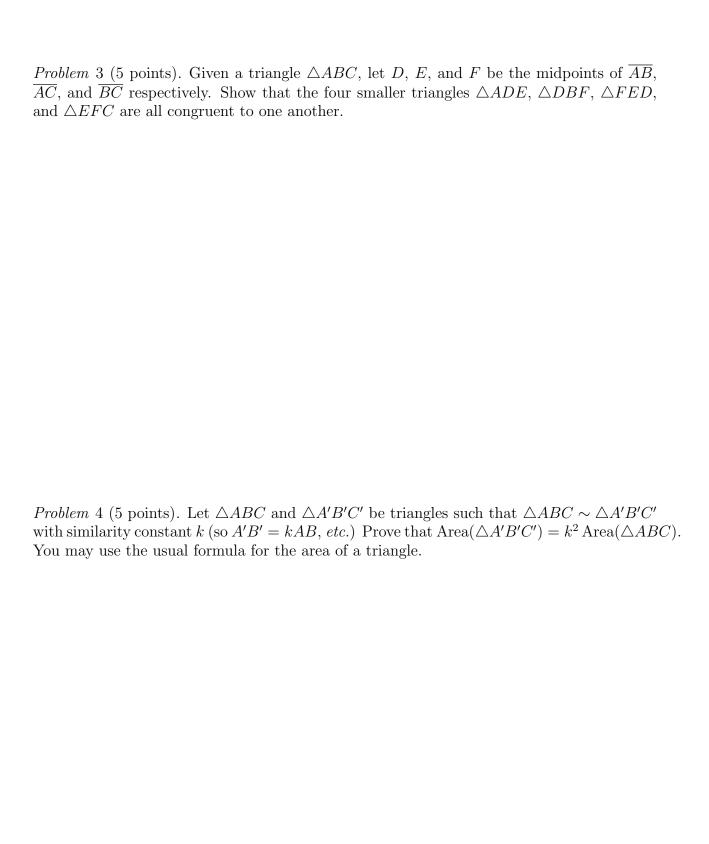
## Student ID number:

## Instructions

- Books, notes, and electronic devices may NOT be used. These items must be kept in a closed backpack or otherwise hidden from view during the exam.
- Cheating in any form may result in an F grade for the course as well as administrative sanctions.
- The time remaining will be written on the board periodically.
- You may hand in your exam and leave early, but please do not do this during the last 5 minutes of the exam period because it may disturb other students.

1	/	3
2	/	5
3	/	5
4	/	5
5	/	5
6	/	5
Total	/	28





*Problem* 5 (5 points). Prove that  $\cos(30^{\circ}) = \sqrt{3}/2$ .

Problem 6 (5 points). Let  $O_1$ , A and  $O_2$  be collinear points with A between  $O_1$  and  $O_2$ . Let  $c_1$  be the circle with center  $O_1$  and radius  $O_1A$ , and let  $c_2$  be the circle with center  $O_2$  and radius  $O_2A$ . Prove that the circles  $c_1$  and  $c_2$  do not intersect at any point other than A.