MATH 152, HOMEWORK #12
Due Tuesday, November 22

Remember, consult the Homework Guidelines for general instructions. All problems listed by section and exercise number are from our textbook.

GRADED EXERCISES:

1. Section 6.7, Exercise 1. (Do not use Ceva's Theorem on part (b).)

2. Also show that the radius of the incircle (the circle whose center is the incenter and whose radius is the common distance from the incenter to any of the three sides of the triangle) is equal to double the area of the triangle divided by the perimeter of the triangle. That is,

$$r = \frac{2A}{P}.$$

   You may use the fact that the area of a triangle is one half times the base times the height, even though we have not discussed area.

3. Section 6.7, Exercise 3.

4. Section 6.7, Exercise 6.

5. Section 6.7, Exercise 10.

6. Section 6.7, Exercise 14.

7. Section 6.7, Exercise 21.

MATH JOURNAL – please submit on a separate page (not stapled to the rest of the homework), as this will go directly to Kelli, not the grader. Choose ONE of the following and write 1-3 paragraphs (no more than one page, please).

- Choose one of our difficult geometry proofs from Chapter 6 and write a clear outline for it. Leave out most of the detail, but get it organized to the point that a high school student could fill in the gaps without much trouble. Comment on any sticking points you would expect.

- Reflect on any math education topic you have been thinking about. E.g., a really nice technique for teaching an idea, a situation working with a struggling student and how you handled it or wish you'd handled it, general insights on connecting with students, etc.

UNGRADED HOMEWORK:

Section 6.7, Exercises 2, 4, 5, 9, 11, 20