

Math 4060 (Cherry)

Written Assignment Due Monday, February 20 (Assignment #12)

Hartshorne Exercise 3.5 (please give a careful proof that your construction works.)

Written Assignment Due Wednesday, February 22 (Assignment #13)

Hartshorne Exercise 3.10

Written Assignment Due Friday, February 24 (Assignment #14)

Hartshorne Exercises 4.3 & 4.5.

For both problems you must give careful proofs that your constructions work.

For Exercise 4.3, you must do this close to the par value, which means you must do this without first finding the center of the circle. *Hint:* Think about how to put a 60 degree angle inside the circle, and review your Book III propositions.

For Exercise 4.5, you may ignore the par value and use any number of steps. Be careful. You may find a construction that makes an equilateral pentagon, meaning all the sides have the same length, but where all the angles are not exactly the same. Some of these look very close to a regular pentagon, and you can find many such wrong constructions on the internet. These simpler constructions that produce almost regular pentagons were sometimes used historically because they look close enough and are a bit easier. If you do not see how your construction produces the golden ratio, you are probably not doing this problem correctly.