Homework 3

Geometry, MTH 329 Spring 2026
Instructor: Abhijit Champanerkar
Due: Monday March 23rd [1] [2]

Reading

1. Chapter 7

2. Chapter 9

Problems

1. (a) Suppose points A and B are both on the same side of line ℓ. Prove that if line AB is parallel to ℓ, then A and B are equidistant from ℓ. (Hint: Definition 3.10 will be helpful.)

   (b) Suppose points A and B are both on the same side of line ℓ. Prove that If A and B are equidistant from ℓ, then line AB is parallel to ℓ.

2. Prove that if ABCD is a rhombus and one of its interior angles is a right angle then the rhombus is a square.

3. Page 145, Section 7.4: 4, 5, 6

4. Page 156, Section 7.6: 4, 6, 10

5. Page 182, Section 9.2: 4, 8, 10

6. Page 186, Section 9.3: 2, 4

Hand-in: Problems # 2, 7.4.4, 7.6.6, 7.6.10, 9.2.4, 9.3.3

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[1] Please upload pdf scan on Brightspace

[2] All section, chapter, page and example numbers refer to the book "Geometry: The Line and the circle" by Carroll and Rykken.