

**COLLEGE GEOMETRY  
HOMEWORK 6**

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Due March 13 by 8 a.m.

- (1) Show that the taxicab geometry satisfies the ruler postulate.
- (2) In the taxicab geometry, there is an equilateral triangle which is not equiangular. Give an example of such a triangle.
- (3) Prove the triangle inequality is false with the taxicab geometry.
- (4) Show  $SSS$  is false in the taxicab geometry.
- (5) Prove the existence and uniqueness of perpendicular bisectors.
- (6) Prove the existence and uniqueness of a reflected point.
- (7) Prove the closest point on a segment theorem.