Folding and Tracing

Short-answer questions about folding and tracing.

Problem 1 *What are the rules for folding and tracing constructions?*

Problem 2 *Use folding and tracing to bisect a given line segment. Explain the steps in your construction.*

Hint: *Fold one endpoint of the segment onto the other. The midpoint is where the fold intersects the segment. (Note that the fold is the perpendicular bisector of the segment.)*

Problem 3 *Given a line segment with a point on it, use folding and tracing to construct a line perpendicular to the segment that passes through the given point. Explain the steps in your construction.*

Hint: *Fold the line onto itself so that the fold goes through the given point. (You may need to extend the segment to see enough of the line.)*

Problem 4 *Use folding and tracing to bisect a given angle. Explain the steps in your construction.*

Hint: *Fold one side of the angle onto the other so that the fold goes through the vertex of the angle.*

Problem 5 *Given a point and line, use folding and tracing to construct a line perpendicular to the given line that passes through the given point. Explain the steps in your construction.*

Hint: *Fold the line onto itself so that the fold goes through the given point.*

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Problem 6 *Given a point and line, use folding and tracing to construct a line parallel to the given line that passes through the given point. Explain the steps in your construction.*

Hint: *Construct a perpendicular to a perpendicular as follows: (1) Fold the line onto itself so that the fold goes through the given point. (2) Fold the new fold onto itself so that the fold goes through the given point.*

Problem 7 *Given a length of* 1*, construct a triangle whose perimeter is a multiple of* 6*. Explain the steps in your construction.*

Problem 8 *Construct a* 30-60-90 *right triangle. Explain the steps in your construction.*

Problem 9 *Given a length of* 1*, construct a triangle with a perimeter of* $3 + \sqrt{5}$*. Explain the steps in your construction.*
