Proof by Picture

Short-answer proofs by pictures.

Problem 1 *Explain how a perpendicular bisector is different from an altitude. Use folding and tracing to illustrate the difference.*

Problem 2 *Explain how a median different from an angle bisector. Use folding and tracing to illustrate the difference.*

Problem 3 *Given a triangle, use folding and tracing to construct the circumcenter. Explain the steps in your construction.*

Problem 4 *Given a triangle, use folding and tracing to construct the orthocenter. Explain the steps in your construction.*

Problem 5 *Given a triangle, use folding and tracing to construct the incenter. Explain the steps in your construction.*

Problem 6 *Given a triangle, use folding and tracing to construct the centroid. Explain the steps in your construction.*

Problem 7 *Could the circumcenter be outside the triangle? If so explain how and use folding and tracing to give an example. If not, explain why not using folding and tracing to illustrate your ideas.*

Problem 8 *Could the orthocenter be outside the triangle? If so explain how and use folding and tracing to give an example. If not, explain why not using folding and tracing to illustrate your ideas.*

Author(s): Bart Snapp and Brad Findell

Problem 9 *Could the incenter be outside the triangle? If so explain how and use folding and tracing to give an example. If not, explain why not using folding and tracing to illustrate your ideas.*

Problem 10 *Could the centroid be outside the triangle? If so explain how and use folding and tracing to give an example. If not, explain why not using folding and tracing to illustrate your ideas.*

Problem 11 *Where is the circumcenter of a right triangle? Explain your reasoning and illustrate your ideas with folding and tracing.*

Problem 12 *Where is the orthocenter of a right triangle? Explain your reasoning and illustrate your ideas with folding and tracing.*