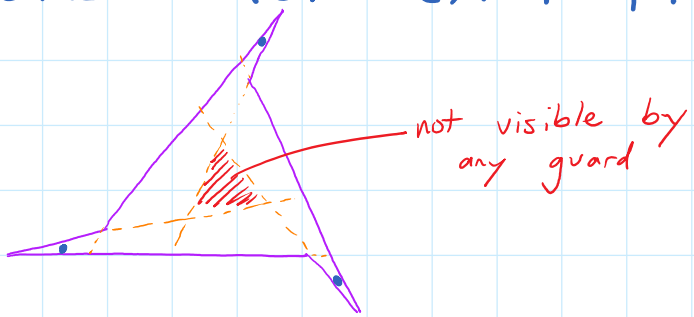
QUESTIONS FROM LAST TIME

1.



2. Orthogonal Polygons: $\left\lfloor \frac{n}{4} \right\rfloor$

SCISSORS CONGRUENCE

A **DISSECTION** of a polygon P cuts P into a finite number of smaller polygons.

Polygons P and Q are **SCISSORS CONGRUENT** if P can be dissected into $P_1, \ldots, P_n$, which can be reassembled by translations (slide) and rotations to form Q. (Note: reflections not allowed)

EXAMPLES:

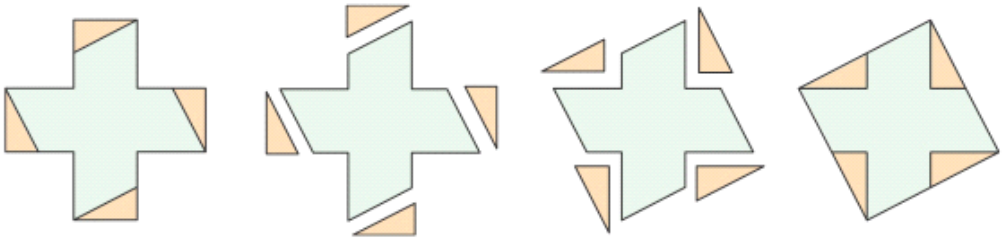


Figure 1.19. The Greek cross is scissors congruent to a square.

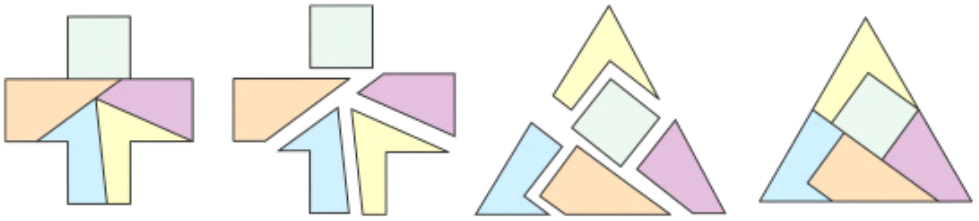
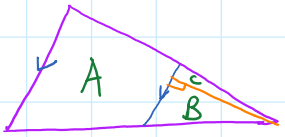
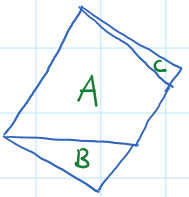


Figure 1.20. Lindgren's dissection of a Greek cross to an equilateral triangle.

Figure from Devadoss and O'Rourke textbook.

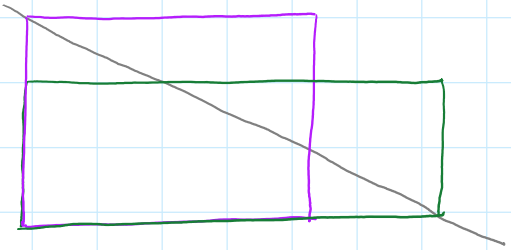
LEMMA: Every triangle is scissors congruent to a rectangle.



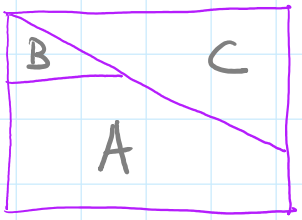


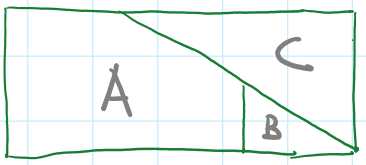
LEMMA: Any two rectangles of the same area are scissors congruent.

proof:

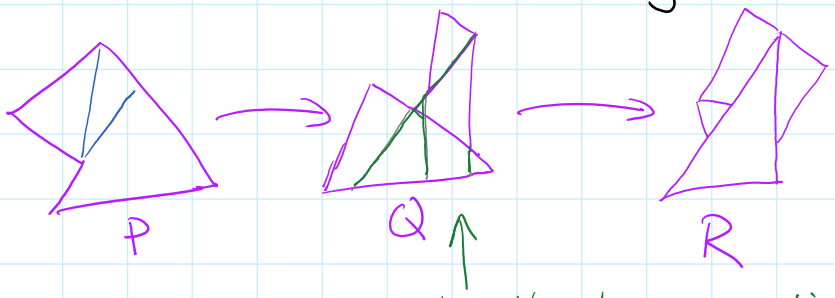


Details about similar/congruent triangles are in the text.





LEMMA: Scissors congruence is transitive. That is, if P is scissors congruent to Q, and Q is scissors congruent to R, then P is scissors congruent to R.



overlay the two dissections

THEOREM: Any two polygons of the same area are scissors congruent.

interactive demonstration: https://dmsm.github.io/scissors-congruence/