

Activity 1

Ladders and Saws

We are going to create a few diagrams that will help us review some properties we have covered in previous chapters. These properties will be used later in the module as pieces to proofs.

Materials: 3 sheets of blank white paper, 3 different colored pencils, straight edge, and a triangle

Activity directions:

- 1) Classify the triangle. Be specific.
- 2) Color each angle a different color.
- 3) Draw a baseline across one of the sheets of paper from edge to edge about a quarter of the way down from the top of the paper. Follow along as I demonstrate the steps.
- 4) Step 1) Place the triangle at the left edge of the paper so it sits on the baseline and trace along the left side.

Step 2) Mark the vertex on the right side of the triangle on the baseline.

Step 3) Slide the triangle along the baseline until the left vertex is at the marked point. Trace the left side again and mark the vertex right again.

Repeat these three steps until no more of the left side lengths will fit on the baseline. Shade each angle the same as the angle color on the triangle.

"This figure is what we will call a ladder."

- 5) Repeat this process for the other two angles and discuss the results. Are all your ladders different? Explain.

- 6) Using a second sheet of paper, draw another baseline at approximately the same location on the paper.

Step 1) Line up the triangle on the baseline at the leftmost position. Trace the other two sides of the triangle not on the baseline. Color the angles the same as the original triangle.

Step 2) Rotate the triangle 180° about the midpoint of the rightmost side and slide the triangle so the vertex touches the baseline and the left side fits the right side of the triangle you just traced.

Step 3) Now trace only the right side of the rotated triangle.

Continue to trace and color, rotate and slide, and trace until the triangles fill the length of the baseline.

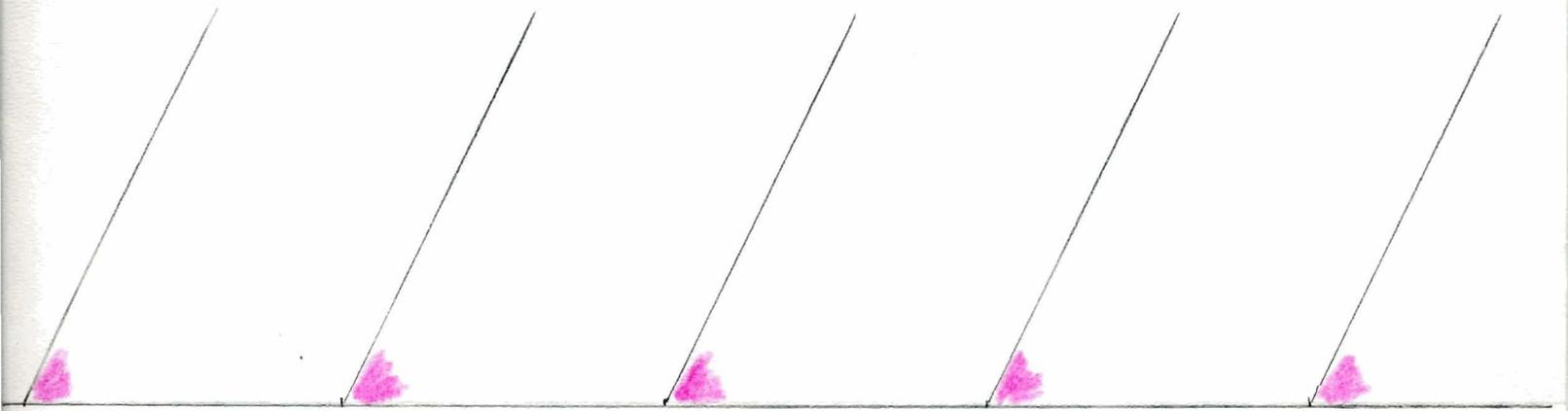
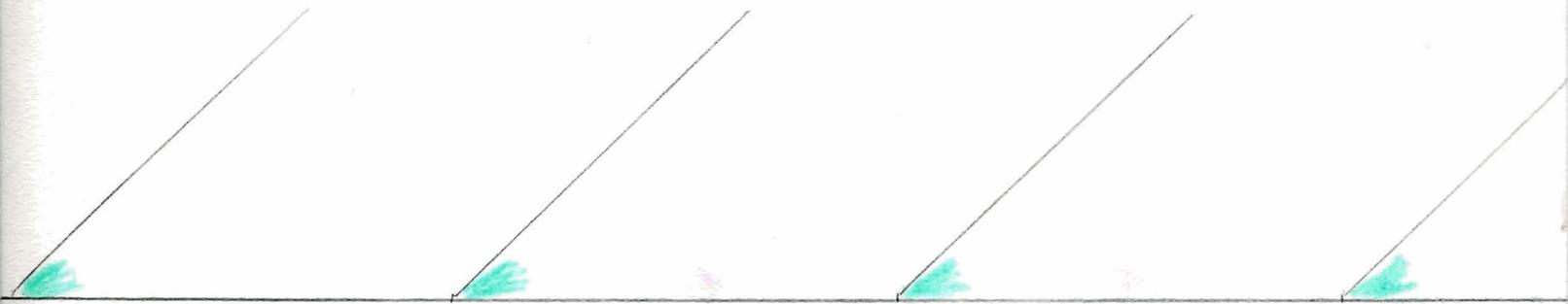
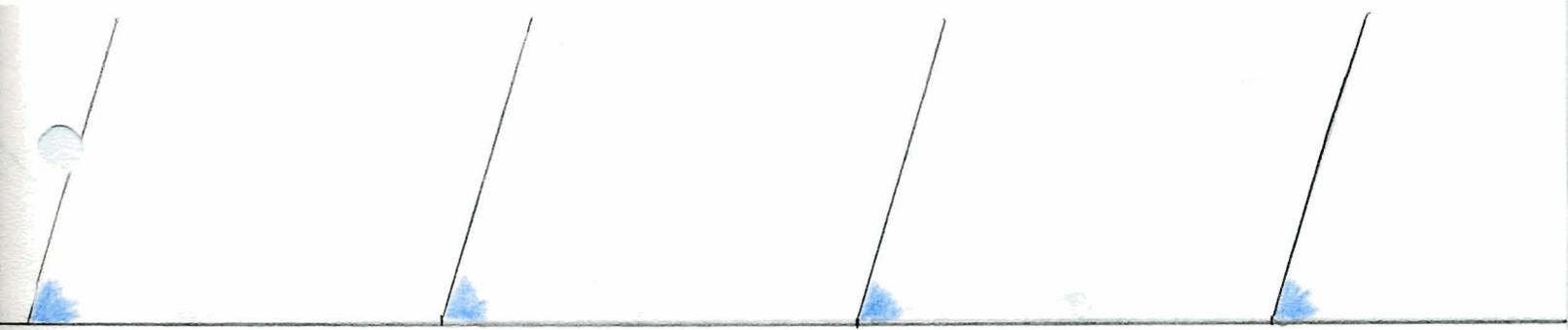
"This figure is what we will call a saw."

- 7) The third sheet of paper will be used to fill the page with ladders and saws.

Step 1) Draw a baseline on the sheet of paper so the triangle almost touches the top of the paper. Make a row of saws and color the angles for each triangle on top of the baseline all the way across it.

Step 2) Go back and place your triangle on the first triangle on the baseline. Rotate the triangle 180° about the midpoint of the rightmost side.

Step 3) Place it underneath the baseline and make a parallelogram. Now complete the row of triangles below the baseline. Be sure to shade the angles so they match the original triangle. (figure 5)



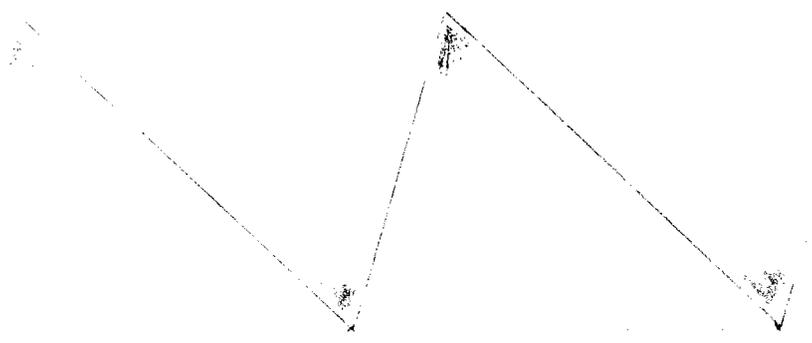
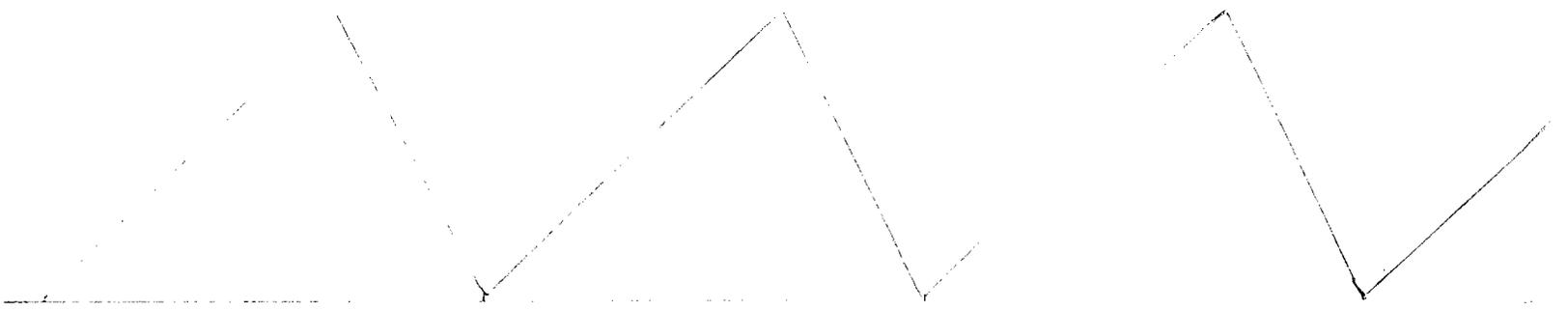


figure 5

