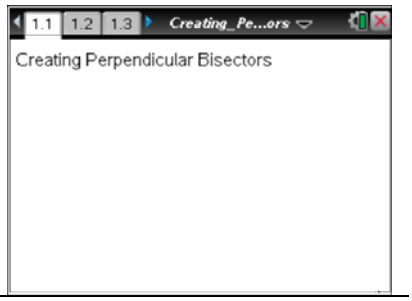
Creating Perpendicular Bisectors
Student Activity

Name _____

Class _____

You are encouraged to create the document for this activity. Use the instructions for Creating a Document: Creating Perpendicular Bisectors. Follow the steps to create the document and then answer the questions below. If your teacher decides that you should not create the document, open the TI-Nspire document ***Creating_Perpendicular_Bisectors.tns***.

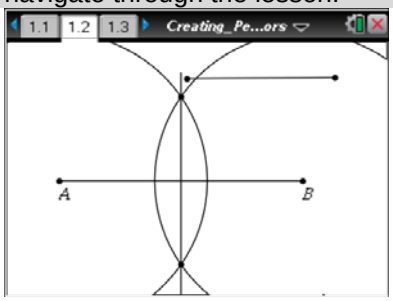


1. Consider methods 1–5. Which of the methods allows you to change the length of the bisected segment so that it remains perpendicularly bisected?

2. Classical constructions allow the use of only a straight edge and compass. Explain why each method is or is not considered a classical construction.

Move to page 1.2.

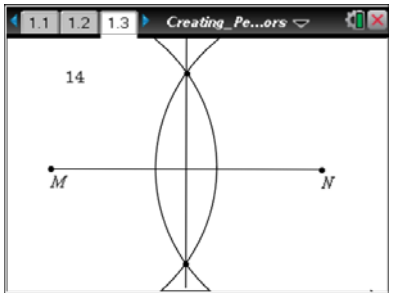
Press ctrl ▶ and ctrl ◀ to navigate through the lesson.



3. a. Change the length of the segment in the upper part of the screen by grabbing one of the endpoints. What do you observe?

   b. In a classical construction of a perpendicular bisector, you are instructed to open your compass to a length that is more than half the length of the given segment to be bisected. Explain why this instruction is necessary.

Move to page 1.3.



4. a. Double-click in the text box that contains the number. Type in a different number. Press enter. Repeat this process several times. Describe what happens.

   b. Estimate the length of the bisected segment.

   c. Choose a radius that is bigger than the length of the segment. What happens? (Note: You may have to grab the screen in a white space and use the NavPad to see what is going on above and below your handheld screen.)

5. What is the difference between method 3 and method 5?

6. If the intersection points of the two circles are labeled *D* and *E*, what kind of triangles are ΔMDN and ΔMEN? Explain how you know.

7. Of the five methods, which do you prefer? Why?