Creating: Triangle Midsegments
MATH NSPIRED

Activity Overview

In this activity, you will create a triangle with a midsegment, measure a side and the midsegment, define variables, and prepare a spreadsheet to capture data from measurements.

Materials

- *Technology needed (TI-Nspire™ handheld, computer software)*
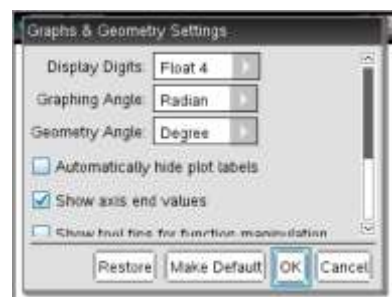
Steps

Step 1: Preparing the document

1. Open a new document by clicking on $\boxed{\text{🏠 on}}$ **> New Document > Add Notes**.

2. Type: Triangle Midsegments.

Note: To obtain capital letters, press the $\boxed{\text{⇧shift}}$ key, then the letter.

3. Press $\boxed{\text{doc▾}}$ **> File > Save As ….**
   Type: Triangle_Midsegments.
   Tab to $\boxed{\text{save}}$ and press $\boxed{\text{enter}}$.

Note: To obtain the underscore, press $\boxed{\text{ctrl}}$ $\boxed{\text{␣}}$.

4. To add a new page, press $\boxed{\text{ctrl}}$ $\boxed{\text{doc▾}}$ **> Add Geometry**.

5. To hide the scale in the right corner of the screen, go to **Menu > View > Hide Scale**.

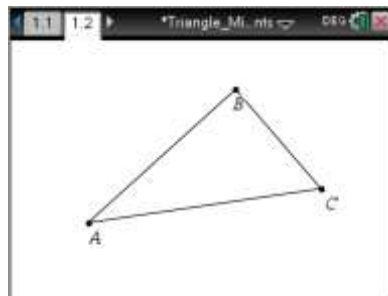6. Press **Menu > Settings**. Select *Float 4* for display digits. Tab to OK and press $\boxed{\text{🖉}}$ or $\boxed{\text{enter}}$.

Step 2: Drawing triangle *ABC*

1. Press **Menu > Shapes > Triangle**.
2. Press ⌨ to place the first point of the triangle and immediately press ⇧shift A to label the point *A*.
3. Repeat steps to complete the triangle, labeling the other points *B* and *C*.
4. Press esc to exit the **Triangle** tool.

Note: If the labels were not created when the triangle was created, press **Menu > Actions > Text** to label the points.

**Step 3: Constructing midpoints of segments *AB* and *AC***

1. Press **Menu > Construction > Midpoint**.
2. Move cursor to side *AB* of the triangle until the word *side* appears. Press ⌨ to construct the midpoint. Immediately label the point *M*.
3. Construct the midpoint *N* of side *AC*.
4. Press esc to exit the **Midpoint** tool.
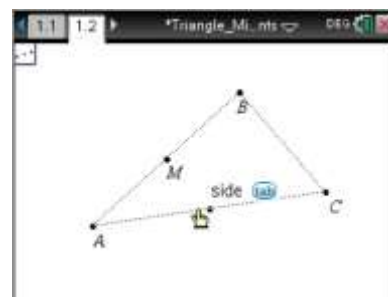
Step 4: Drawing the midsegment

1. Press **Menu > Points & Lines > Segment**.
2. Connect *M* and *N* by clicking on each point.
3. Press esc to exit the **Segment** tool.
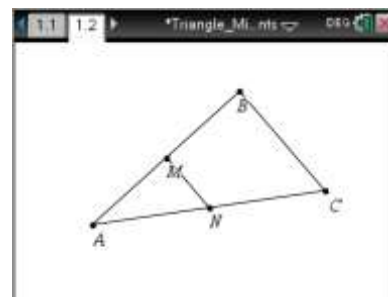
Step 5: Measuring the midsegment and BC

1. Press **Menu > Measurement > Length**.
2. Click segment *MN*. Move the measurement to a desirable location and press ⌨ to place it.
3. To measure segment *BC*, move your cursor over the segment, and press tab until *side* appears. Press ⌨. Move the measurement to a desirable location.
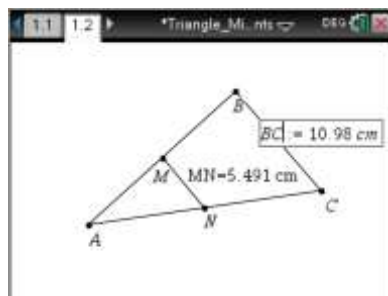4. Press esc to exit the **Measurement** tool.
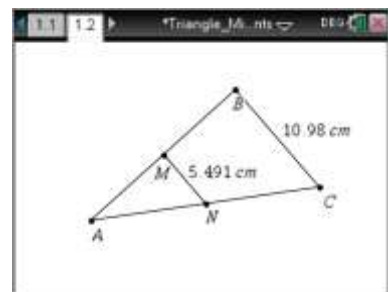
Step 6:   Defining *MN* and *BC* as variables

1. Click once on the measurement of *MN* to highlight. Press
    `ctrl` `var`.

2. Type `⇧shift` `M` `⇧shift` `N` `enter` to define the variable.

3. Repeat to define variable *BC*.

Step 7:   Labeling columns

1. Press `ctrl` `doc▾` **> Add Lists & Spreadsheet** to insert a
    spreadsheet page.

2. Move to the very top row above the diamond row. In Column A,
    type **lmn.** Press `enter`. (Since *MN* is defined as a variable, it
    cannot be used as the heading for the column nor can a space be
    included in the column heading.)

3. In Column B, type **lbc** for the heading. (the *l* is for *list*)
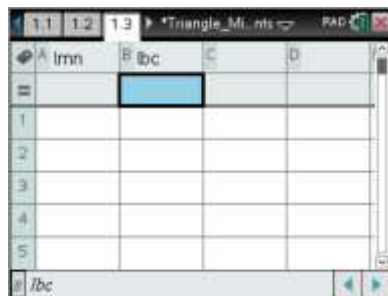
Step 8:   Defining columns to capture data

1. Move to the diamond row in Column A.
2. Press **Menu > Data > Data Capture > Manual.**
3. Type **mn** for the variable and press `enter`.
4. Move to the diamond row in Column B.
5. Press **Menu > Data > Data Capture > Manual.**
6. Type **bc** for the variable and press `enter`.
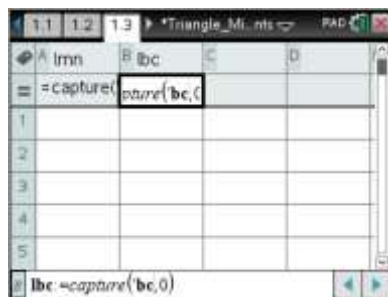
Step 9:   Saving the document

1. Press `ctrl` `S`.