Geometer's Sketchpad

Selection Tool

- always deselect before selecting
- click, hold and drag to move an object
- hold the shift key while selecting more than one object

Point Tool

- click on the sketch pad to create a point
- to create a "special" point move to the location, check the command line then click - always check the construction by dragging the point

Circle Tool

- click, hold and drag on the sketch pad to create a circle
- circles are created with one control point on the circumference and a centre point

Line Segment Tool

- click, hold and drag on the sketch pad to create a line segment
- click, hold and drag on the tool to change it to a ray or line tool

Text Tool

- click, hold and drag on the sketch pad to create a text box - then start typing
- show/hide a label by clicking on the object
- change a label by clicking on the label

Geometer's Sketchpad

What do I need to select before constructing a …?

Midpoint … one line segment

Point of Intersection … *exactly* two objects

Line Segment … *exactly* two points

Parallel Line … one point *and* one line segment (line or ray)

Perpendicular Line … one point *and* one line segment (line or ray)

Angle Bisector … *exactly* three points (the second point is the vertex of the angle)

Circle … one point for the centre *and* one line segment for the radius <u>or</u>
… one point for the centre *then* one point on the circle

Polygon Interior … *all* of the vertices (selected in order)

Circle Interior … one circle (select the circumference)

Geometer's Sketchpad

What do I need to select before measuring the …?

Distance between two points	**… *exactly* two points**
Length of a line segment	**… one line segment**
Slope of a line segment	**… one line segment**
Angle	**… *exactly* three points (the second point is the vertex of the angle)**
Circumference or area of a circle	**… the circle <u>or</u> the interior of the circle *(if it has been constructed)***
Perimeter or area of a polygon	**… the interior of the polygon *(which must first be constructed)***
Coordinates of a point	**… one point**

Geometer's Sketchpad

How do I make a calculation?

1. Measure anything that will be part of the calculation.

2. Under **Measure** choose **Calculate**.
   - *a calculator screen will appear*

3. Enter the calculation by clicking on one of the calculator keys or one of your measurements.

4. When you are finished entering the calculation click on OK.
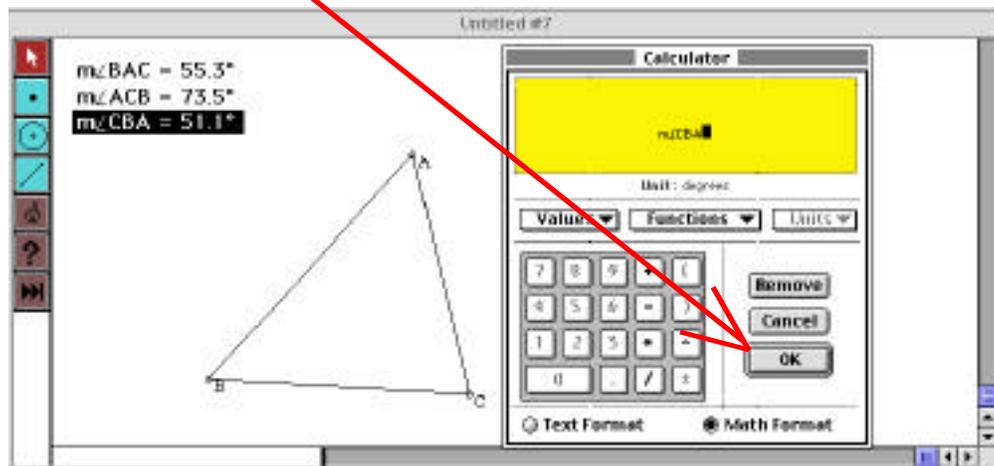
Geometer's Sketchpad

How do I make a table?

1. Measure and calculate anything that will be in the table.

2. Deselect then hold the shift key while selecting all of the measurements and calculations that will be in the table.

3. Under **Measure** choose **Tabulate**.
   - *a table will appear*

4. To add an entry, drag to change the sketch then double click on any number in the table and the new data will appear.
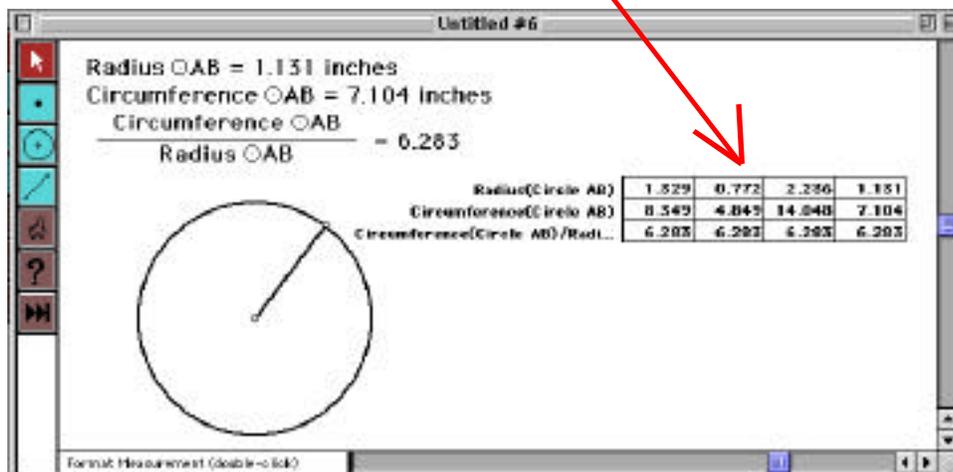
Geometer's Sketchpad

How do I perform a rotation?

1. **Select a point.**
   - this determines the centre of the rotation

2. **Under Transform choose Mark Center.**
   - *watch the point!*

3. **Select an angle.**
   - this determines the angle of the rotation

4. **Under Transform choose Mark Angle.**
   - *watch the angle!*

5. **Select everything you want to rotate.**
   - remember to include points if you want them rotated

6. **Under Transform choose Rotate.**
   - in the dialogue box choose Marked Angle to use the angle you marked or Fixed Angle to enter your own angle of rotation measurement.

7. **Choose OK.**

What happens to the shape and size when a figure is rotated?

Geometer's Sketchpad

How do I perform a translation?

1. **Select a start point *and* an end point.**
   - this determines the direction and magnitude (size) of the translation

2. **Under Transform choose Mark Vector.**
   - *watch the path between the points!*

3. **Select everything you want to translate.**
   - remember to include points if you want them translated

6. **Under Transform choose Translate.**
   - in the dialogue box choose By Marked Vector

7. **Choose OK.**

What happens to the shape and size
of a figure when it is translated?

Geometer's Sketchpad

How do I print a file?

1. Under **File** choose **Print Preview**.

2. Click in the **Scale to Fit Page** box to turn it on.

3. Make sure your printer is ready then choose Print.
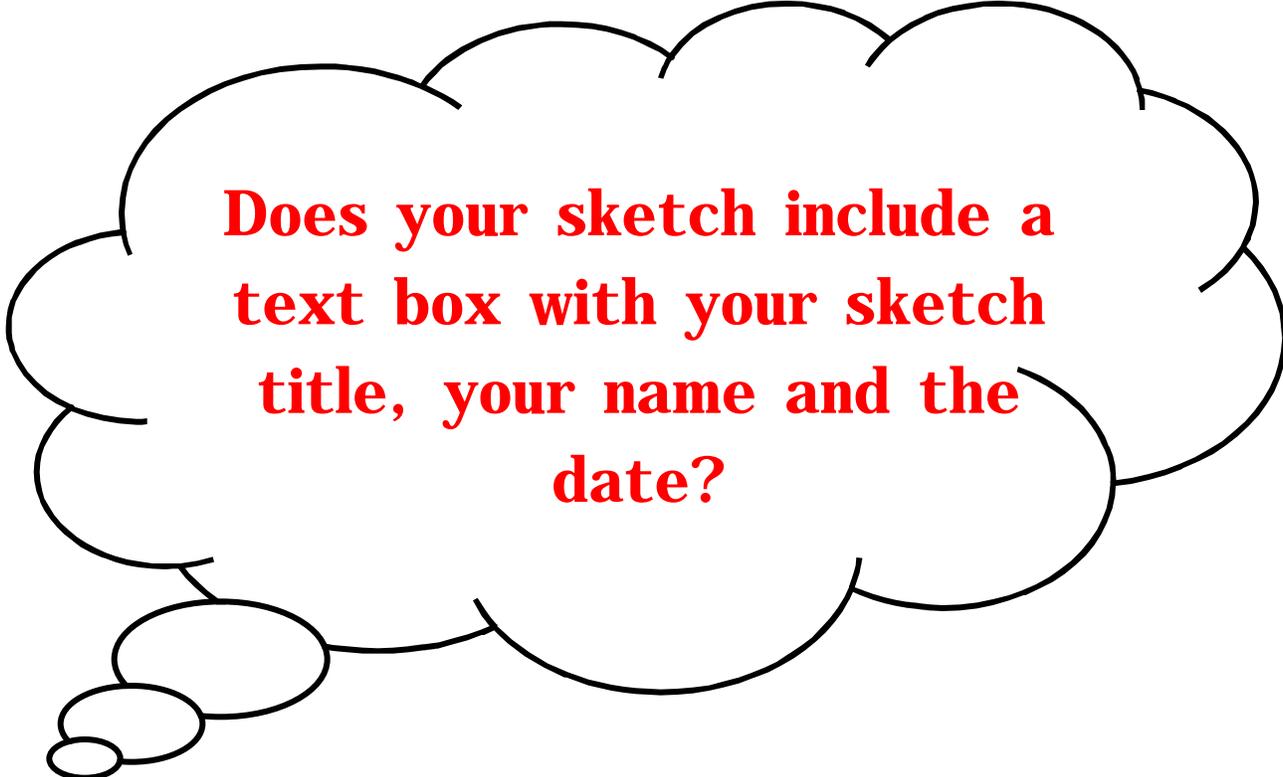
Does your sketch include a text box with your sketch title, your name and the date?

Geometer's Sketchpad

How do I construct a square?

Line perpendicular to AB at A

Line perpendicular to AB at B

Point D

Circle centre A radius AB

Point of intersection C

Hide

Perpendicular line to AC at C

Line segments
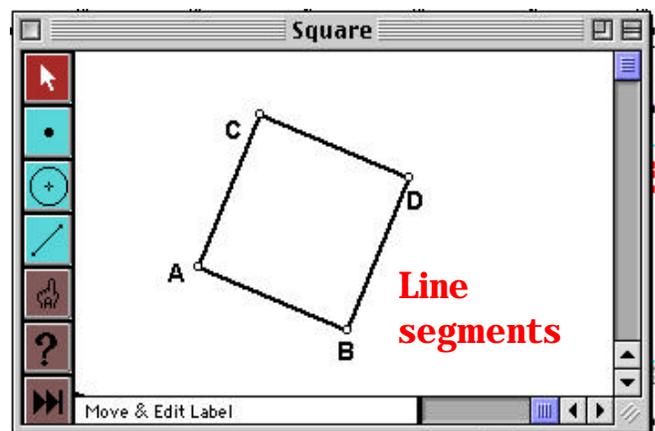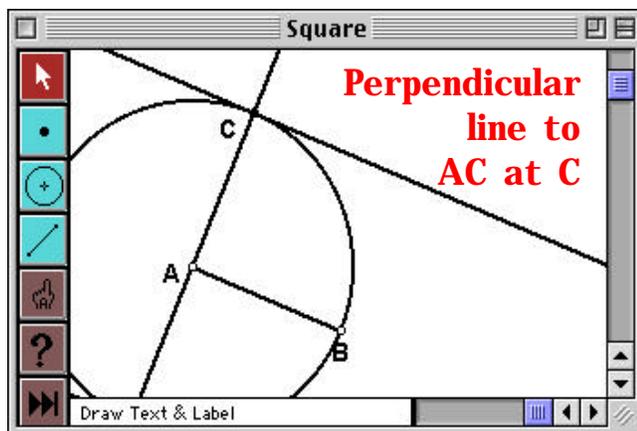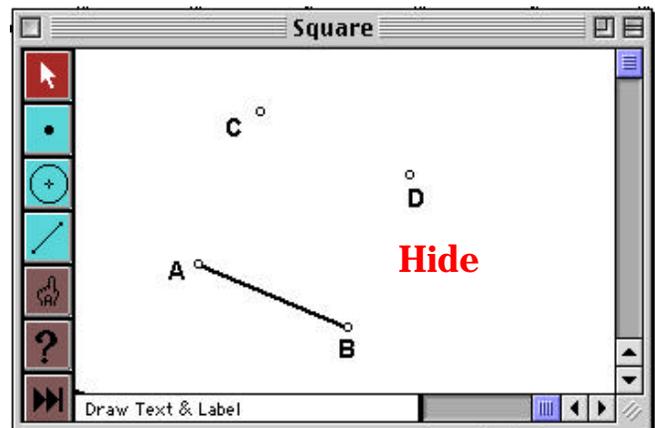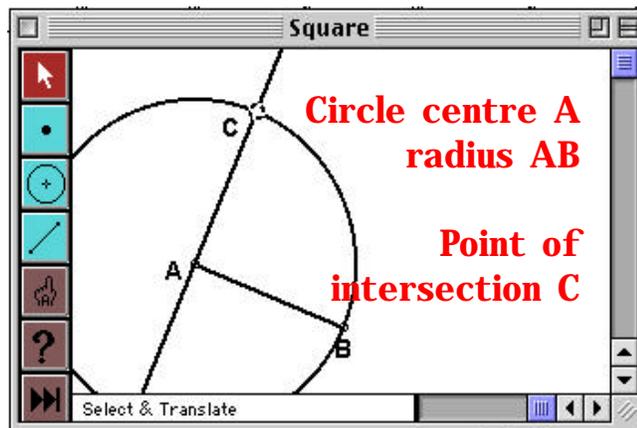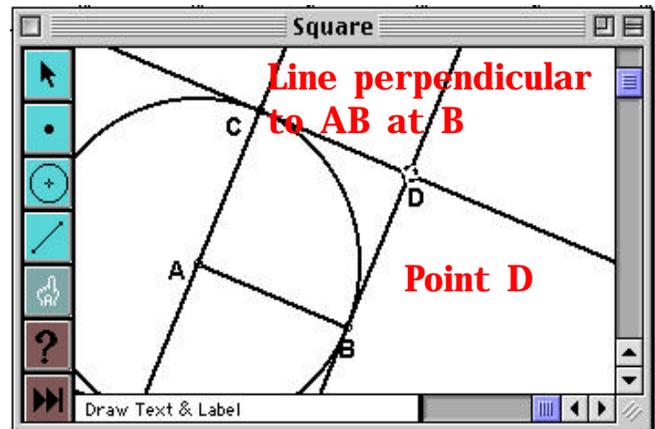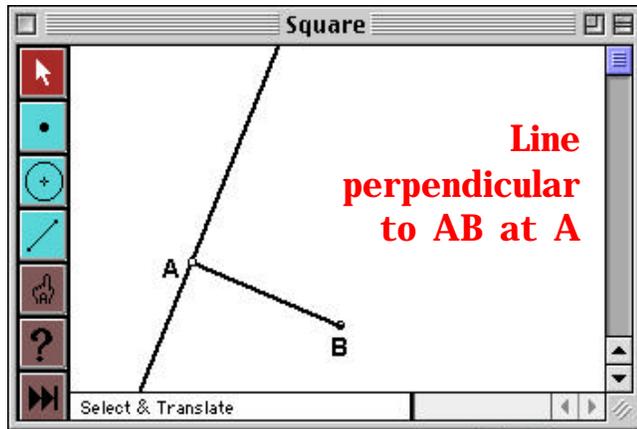
How would you construct a square using rotations?

Geometer's Sketchpad

How do I construct a rectangle?

Line perpendicular to AB at A

Hide

Line perpendicular to AB at B

Line segments

Line perpendicular to AD at D
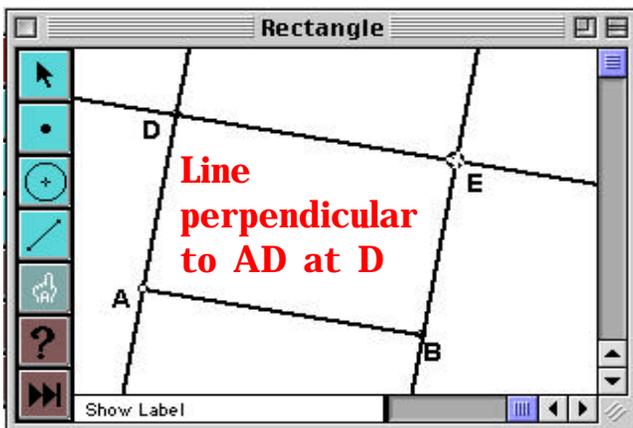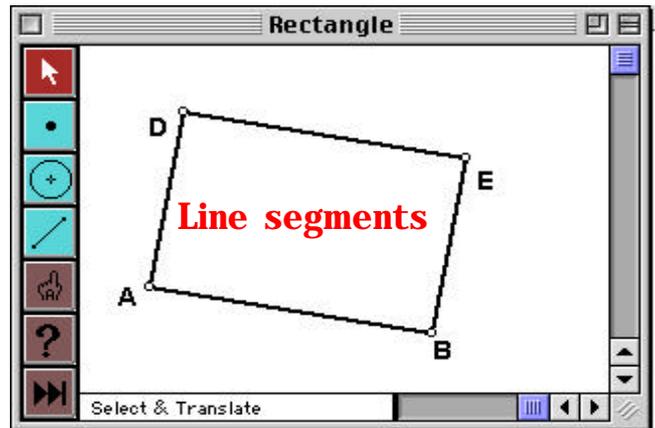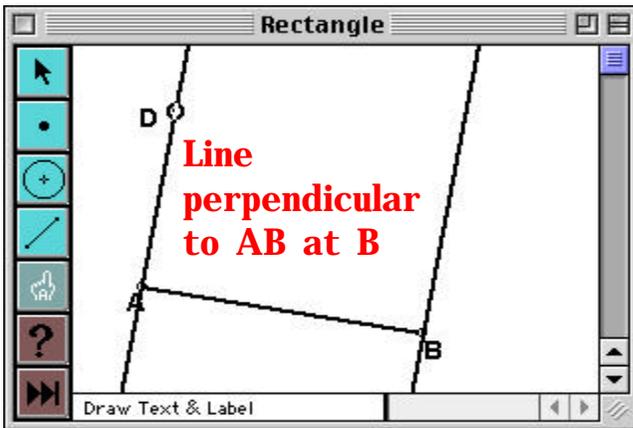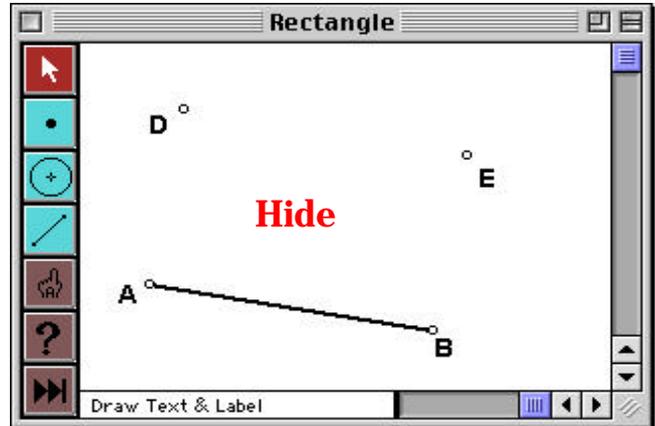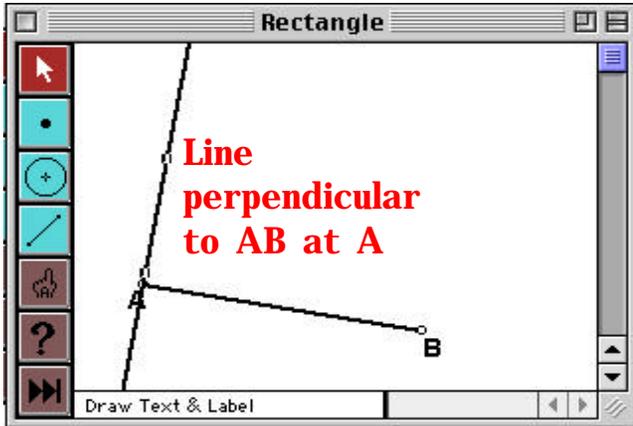
Drag each vertex to check your construction!

Geometer's Sketchpad

How do I construct an equilateral triangle?

Circle with centre A

Control point B

Hide

Circle with centre B and radius BA

Line segments

Point of intersection C

Drag each vertex to check your construction!
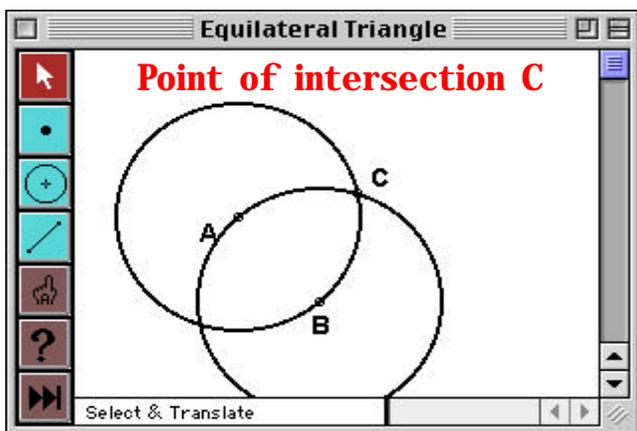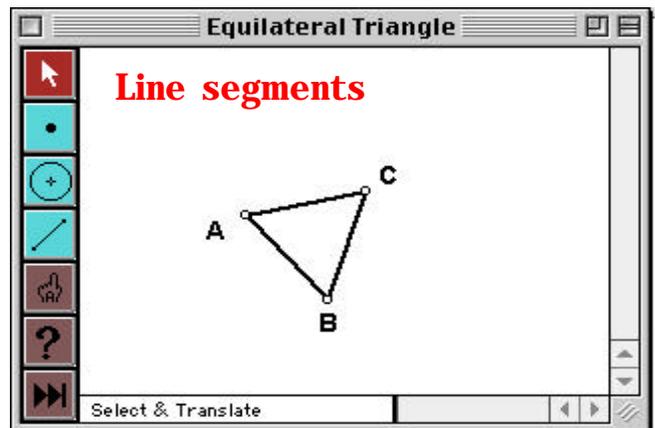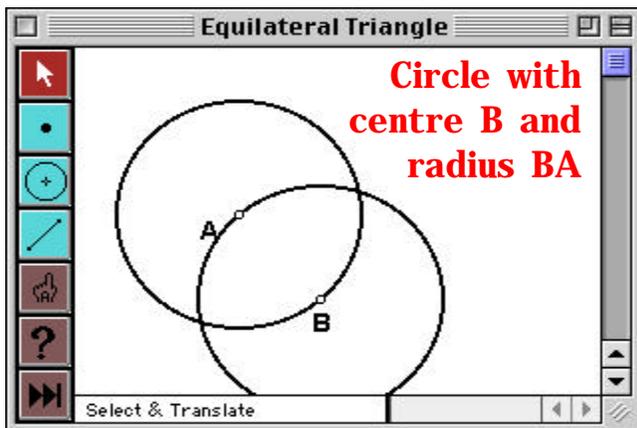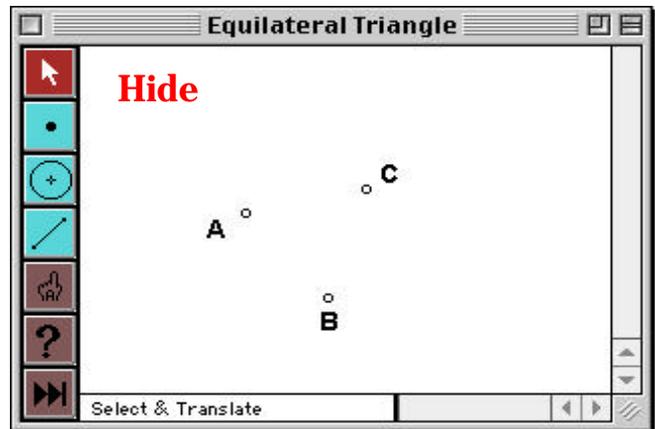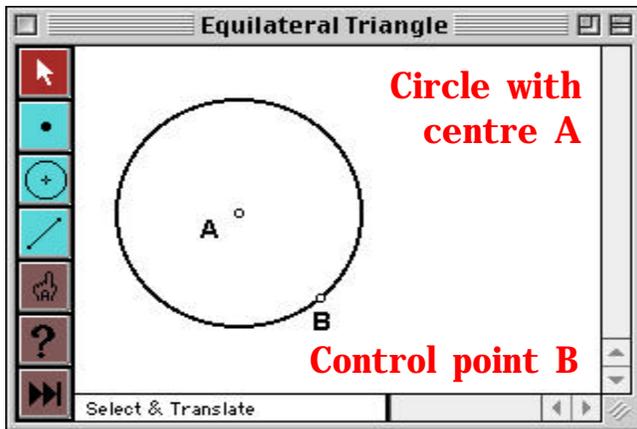
Geometer's Sketchpad

How do I construct an isosceles triangle?

Circle with centre A

Control point B

Line segments

Two points (C and D) on the circle

Check by dragging

Hide
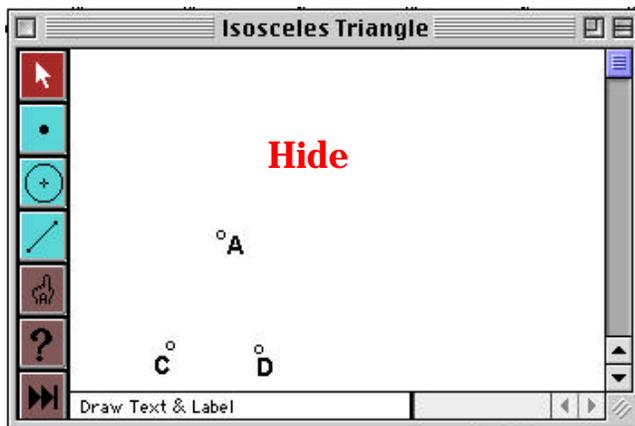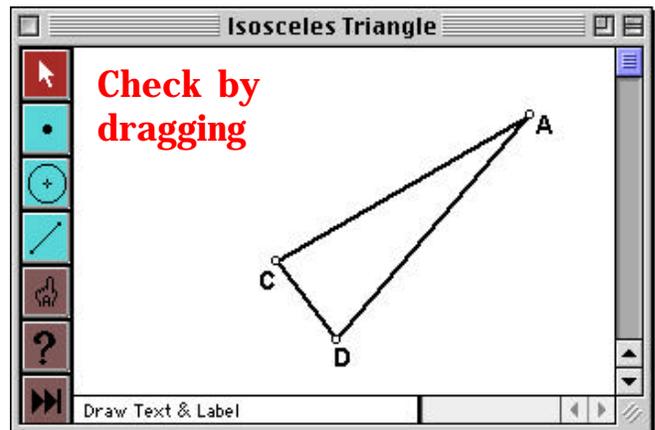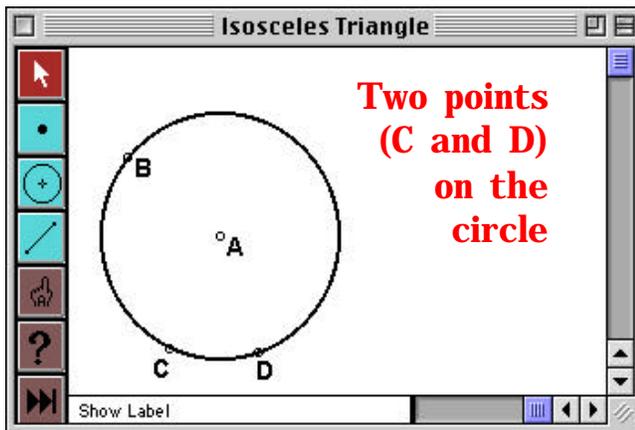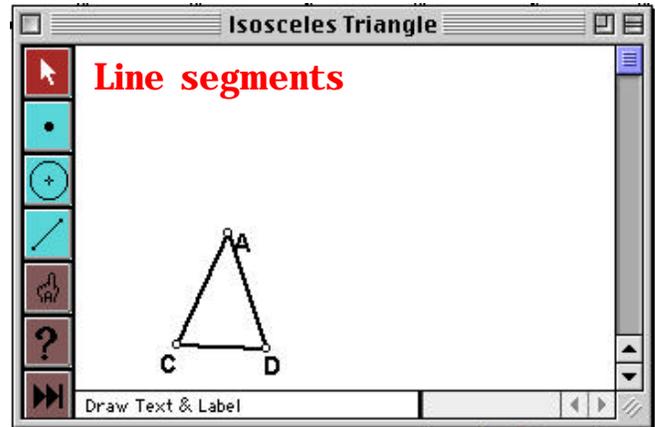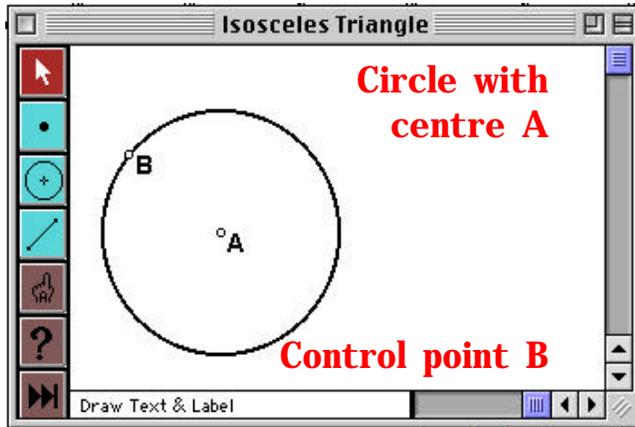
Drag each vertex to check your construction!

Geometer's Sketchpad

How do I construct a right-angled triangle?

Right-Angled Triangle

Select & Translate

A
B

Right-Angled Triangle

H °

Hide

A °

B °

Draw Text & Label

Right-Angled Triangle

Perpendicular line to AB at A

A

B

Draw Text & Label

Right-Angled Triangle

H

Line segments

A

B

Draw Text & Label

Right-Angled Triangle

H °

Any point H on the line

A

B

Draw Text & Label

Drag each vertex to check your construction!