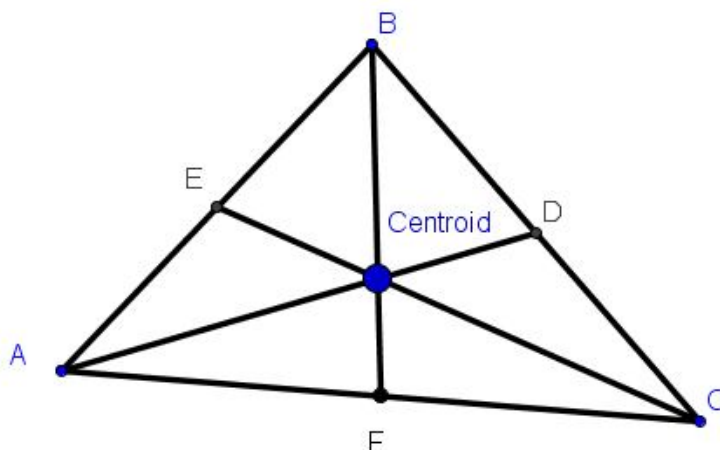# Student Activity Construction 21

Use in connection with the interactive file "Constr 21" on the Student's CD.

> Construction 21: To construct a centroid of a triangle.

1. Name the vertices of the triangle?

   _____

2. Name the three mid points of the sides of the triangle.

   _____

3. What is meant by a median of a triangle and name the medians of this triangle?

   _____

   _____

4. Name the point where the medians of a triangle meet.

   _____

   _____

5. Using the interactive file describe how to find the centroid of a triangle.

   _____

   _____

   _____

   _____

_____

_____

6. Move the points A, B, C of the triangle and as the triangle changes shape determine
   if the medians are still concurrent (meet at the same point). Explain your answer.

   _____

   _____

   _____

7. How would you describe to a non mathematician, what the centroid of a triangle is?

   _____

   _____

   _____

   _____

8. What point is the centre of gravity of a triangle?

   _____

9. Find the centroid of the following
   triangles:
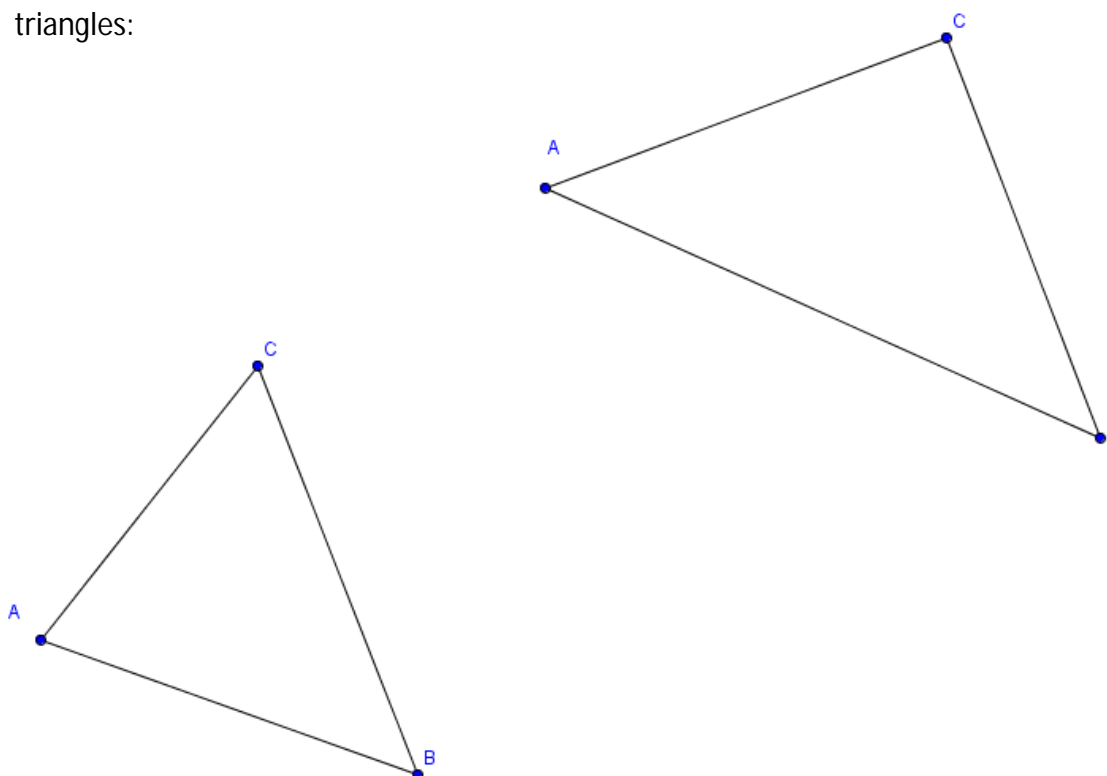
Challenge

The "Ball Box" problem

The Acme Tennis Ball Company is designing a new box to ship its products. The marketing department wants a triangular box that can hold 4 balls, as in the illustration below. The balls fit exactly inside the box, just touching all three walls and the end caps of the container. All 3 walls of the box are the same size.

Assume a tennis ball is 6 cm in diameter, and ignore the thickness of the box material.
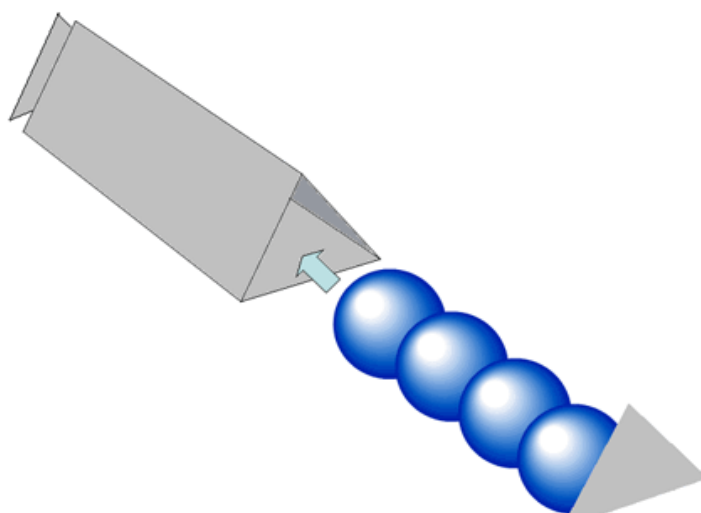
Problem 1
The end of the box is in the shape of a triangle.
What is the type and dimensions of the triangle to 2 decimal places?

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