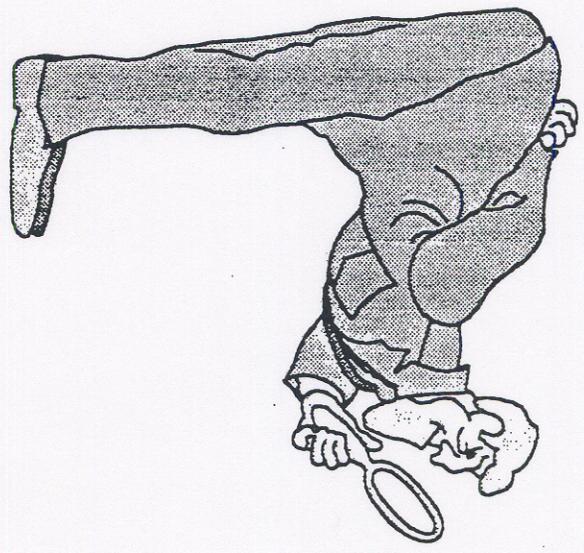
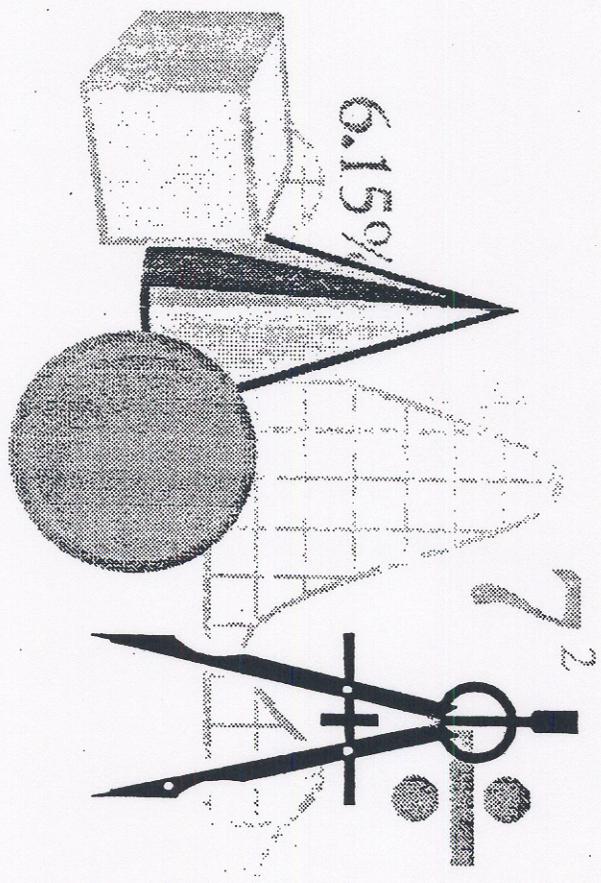


Special Segments of a Triangle



Do Not
Start Until
Told To Do So

Math Lab



Name: _____ Date: _____

Math Lab 5-1.1: Special Segments of a Triangle

Materials Needed: One large triangle page, one 4 triangle page, ruler, pencil

Part 1: Answer these questions:

- Describe what you think a perpendicular bisector could be.
- Describe what you think a median could be.
- Describe what you think an altitude could be.
- Describe what you think an angle bisector could be.

Part 2: Complete these constructions

- Using the large triangle, fold the paper so that point A falls on point B and make a crease through line AB. Unfold the paper and label the point where the crease intersects line AB as M and the point where it intersects line AC as P. Using your ruler, draw a line from point M to point P. Line MP is a perpendicular bisector.
- Fold the paper and make a crease from point C to point M. Using your ruler, draw a line from point C to point M. Line CM is a median.
- Next, fold the paper so that point B lies on line AB and the fold passes through point C. Make a crease. Label the point where the crease intersects line AB as T. Using your ruler, draw the line from point C to point T. Line CT is an altitude.

Part 3: List your observations about each of these three special segments you have folded. Look at how they compare to each other.

Part 4: More construction!

- Fold the large triangle so that line CB lies on line CA and the crease passes through point C. Label the point where the crease intersects line AB as X. Using your ruler, draw the line from point C to point X. Line CX is an angle bisector.

Part 5: More observations!

- What kind of things do you observe about an angle bisector?

Part 6: Three is the magic number!

- Every triangle has three perpendicular bisectors, one for each side.
- Every triangle has three medians, one from each angle to the midpoint of the side opposite that angle.
- Every triangle has three altitudes, one from each angle to the opposite side so that this line segment is perpendicular to the opposite side.
- Every triangle has three angle bisectors, a segment that bisects an angle and has an endpoint at another point on the triangle.

- Using the paper with four triangles on it and using the folding techniques described above, fold and draw the three special segments for each block. Use your ruler to draw all three lines in each triangle. The special segment is designated on the form.

Part 7: Final observations!

- What kind of things did you observe about the perpendicular bisectors?
- What kind of things did you observe about the medians?
- What kind of things did you observe about the altitudes?
- What kind of things did you observe about the angle bisectors?

Part 8: Revisit definitionsnow that you have explored these special segments of triangles, let's rethink our original descriptions:

- Now describe what you think a perpendicular bisector is.
- Find the definition of perpendicular bisector in the book and compare to your answer.

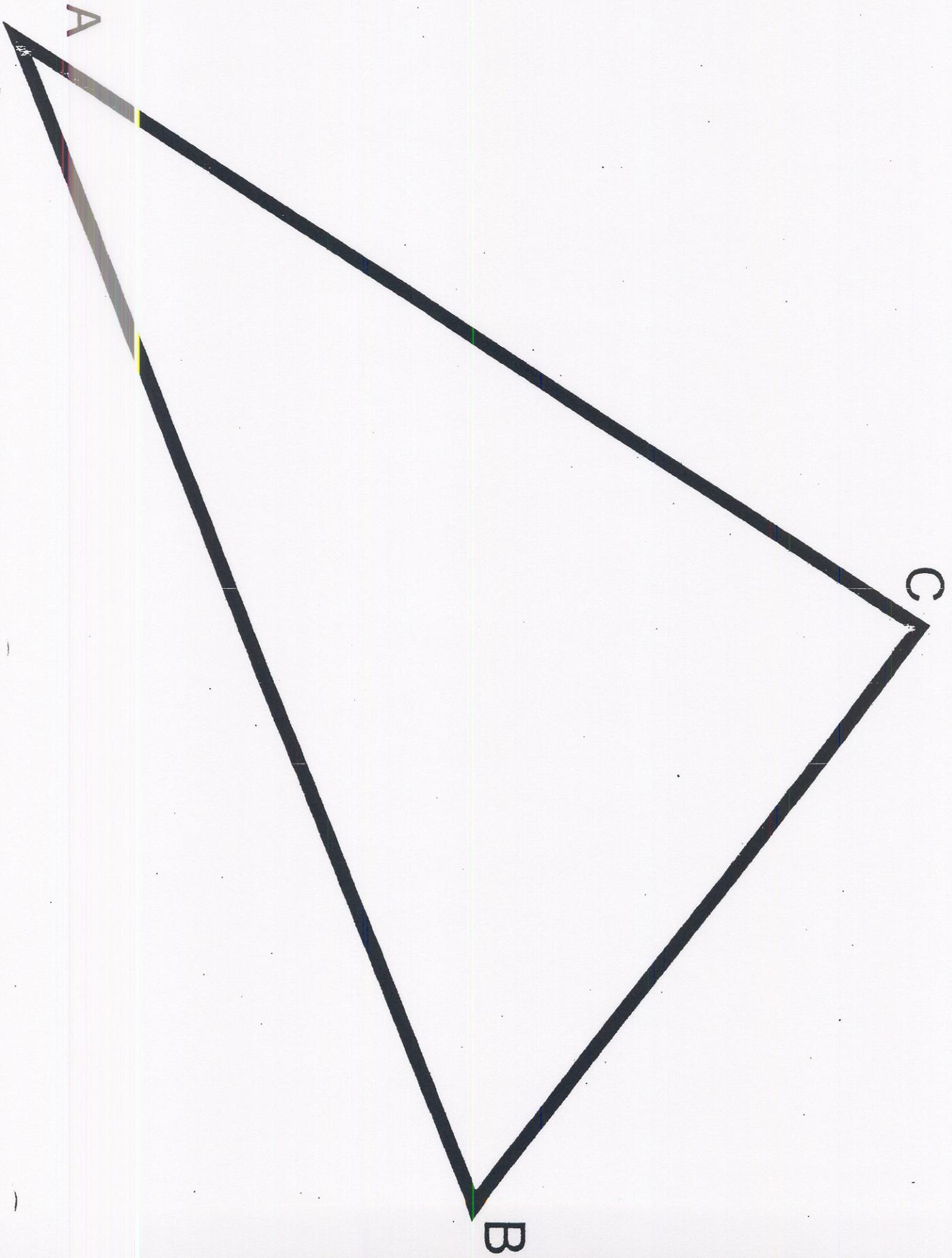
- Now describe what you think a median is.

- Find the definition of median in the book and compare to your answer.
- Now describe what you think an altitude is.
- Find the definition of altitude in the book and compare to your answer.
- Now describe what you think an angle bisector is.
- Find the definition of angle bisector in the book and compare to your answer.

Part 9: Reflect on what you learned today. Are there questions still lurking in your mind. If so, jot them down so you can ask me either today or tomorrow.

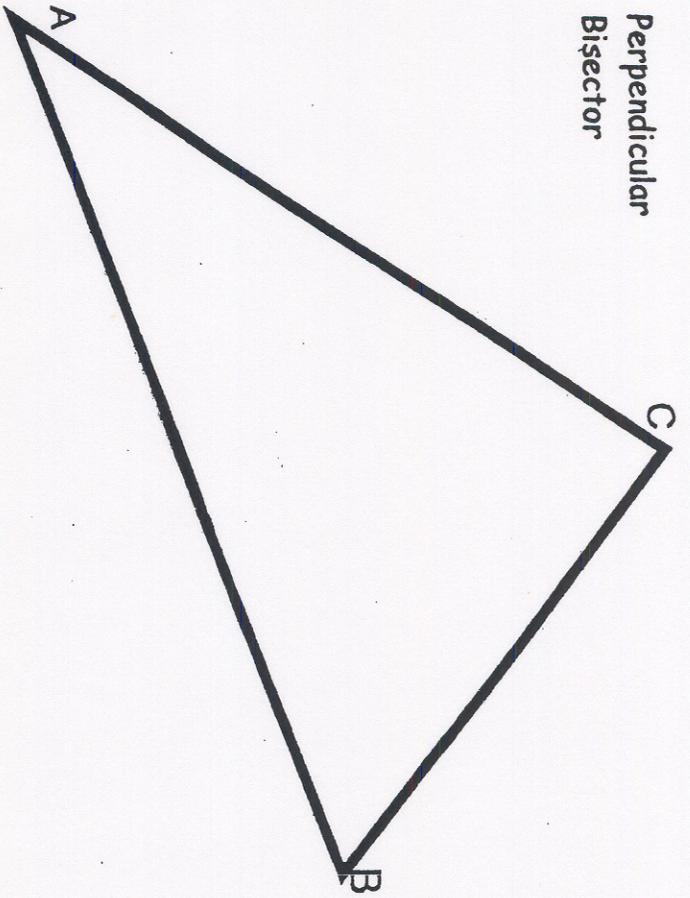
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This Math Lab needs to be filed in your notebook under classwork (after Chapter 5 Objective Section 1)

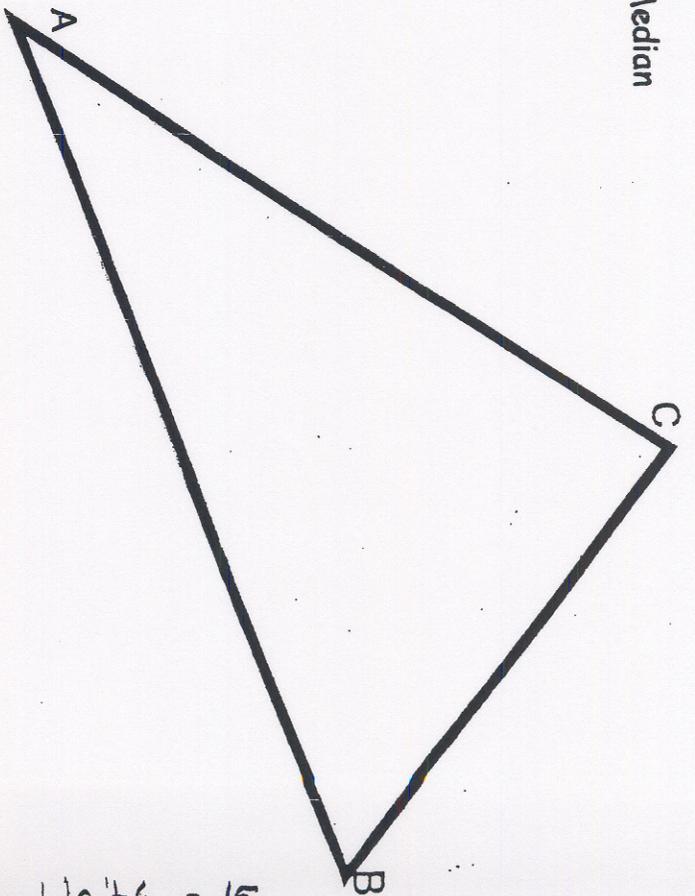


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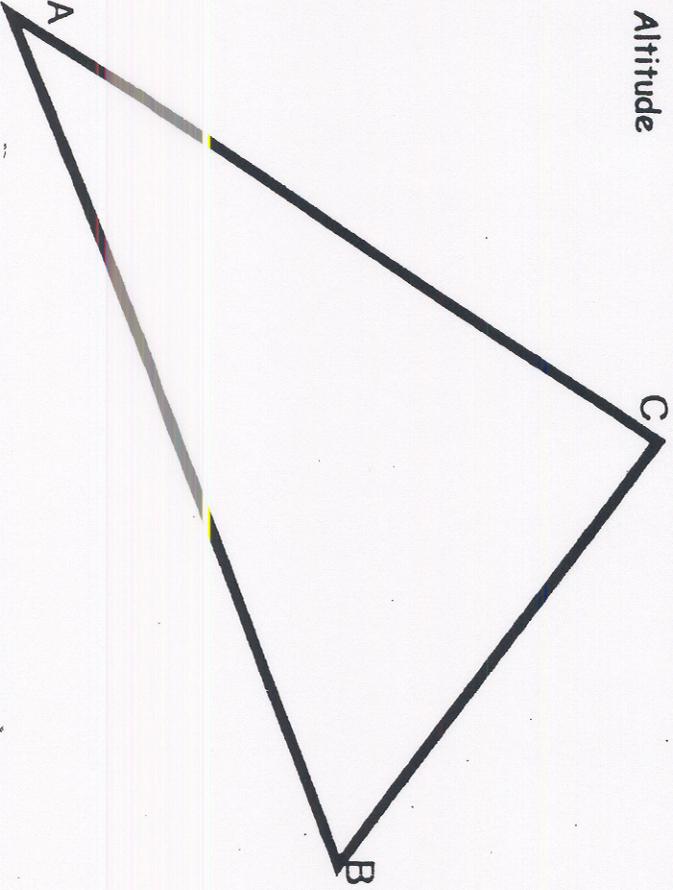
Perpendicular
Bisector



Median



Altitude



Angle
Bisector

