

Marked sketches

Build-your-own notes - points of concurrency

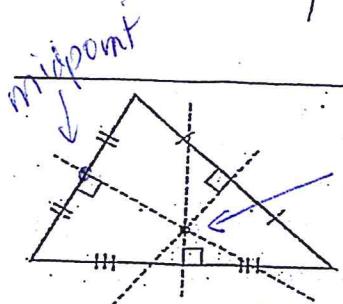
Simulations/constructions

Add to review

p 365 & 42

pp. 196-7: 8-18

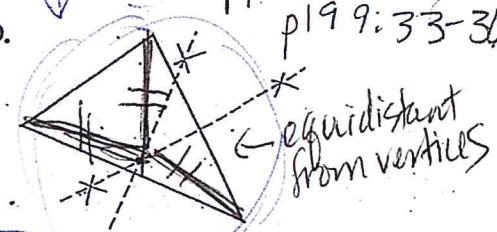
p 199: 33-36



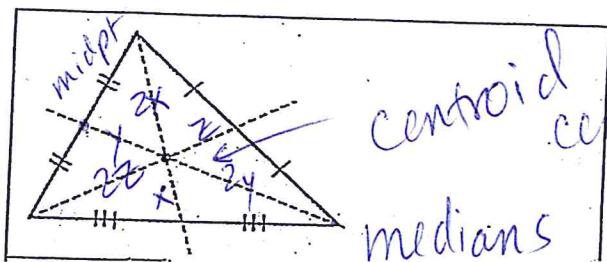
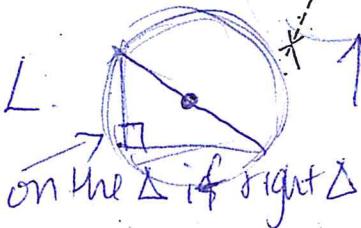
circumcenter

can be outside

perpendicular bisector
passes thru midpoint @ a right L.

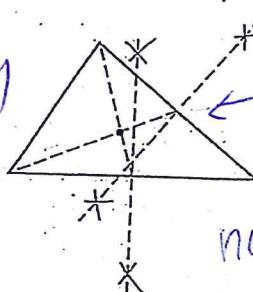


Circumscribed circle

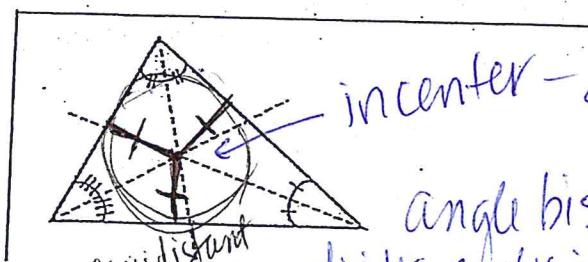


centroid center of gravity

medians
connects vertex to midpoint



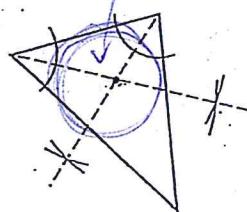
always inside
no circle



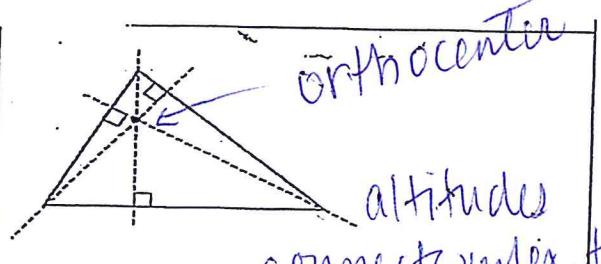
incenter - always inside

equidistant from the sides

angle bisectors
divides angles into $2 = \text{L's}$



inscribed circle



orthocenter

altitudes

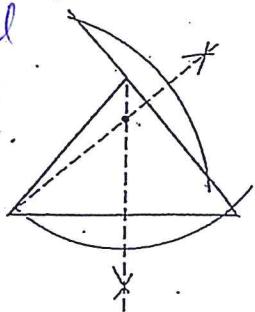
connects vertex to opposite side
at a right L



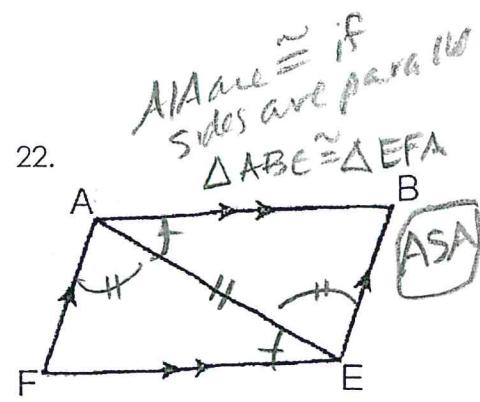
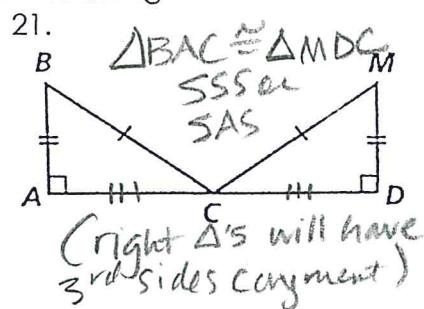
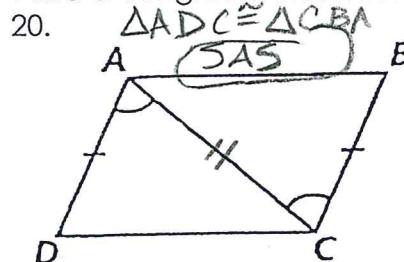
orthocenter altitudes.

Can be outside

no circle



20-22: By what method can the triangles be proven congruent?
Write a congruent statement for the triangles.



23. Reorder the reasons of the following proof to match the correct statements.

- 1) c) $\angle A \cong \angle D$
- 2) e) $\angle B \cong \angle C$
- 3) b) $\overline{AB} \cong \overline{DC}$
- 4) a) $\triangle ABC \cong \triangle DCB$
- 5) d) $\overline{AC} \cong \overline{DB}$

Given: $\overline{AB} \cong \overline{DC}$
 $\angle A \cong \angle D$
Prove: $\overline{AC} \cong \overline{DB}$

Statements	Reasons
1. $\overline{AB} \cong \overline{DC}$	a. SAS Postulate
2. $\angle A \cong \angle D$	b. Reflexive Property
3. $\overline{BC} \cong \overline{CB}$	c. Given
4. $\triangle ABC \cong \triangle DCB$	d. CPCTC
5. $\overline{AC} \cong \overline{DB}$	e. Given

24. The vertex angle of an isosceles triangle is three times the measure of a base angle. What is the measure of the vertex angle?



$$5x = 180$$

$$x = 36^\circ$$

$$3 \cdot 36 = 108^\circ$$

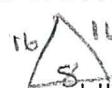
25. Two sides of a triangle are 4 cm and 9 cm. What are possible lengths for the third side?

$$5 \text{ cm} < \text{side length} < 13 \text{ cm}$$

26. Can a triangle be formed with side lengths that are 4, 9, and 12? Explain.

Yes $4+9>12$

27. If the perimeter of isosceles triangle XYZ is 40 and XZ=16, what are the possible values for YZ?

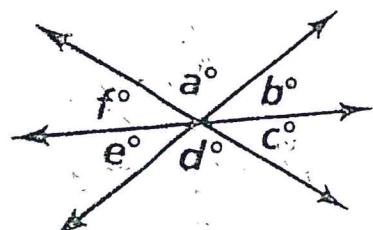


$$8 \text{ or } 12$$

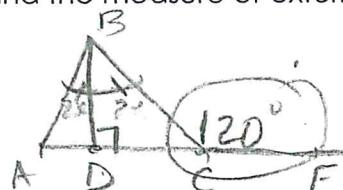
28. Give the diagram at the right, which of the following must be true?

- I. $e+f=b+c$
- II. $f+c=a+d$
- III. $e+a+c=f+b+d$

- A. I only B. I and III C. I and II D. I, II, and III



29. $\triangle ABC$ is an acute triangle. $\overline{BD} \perp \overline{AC}$ and \overline{BD} bisects $\angle ABC$. $m\angle CBD=2x$, and $m\angle ABD=4x-30$. Draw a figure and find the measure of exterior angle BCF.



$$2x = 4x - 30$$

$$30 = 2x$$

$$x = 15$$

