Thursday, November 1, 2012
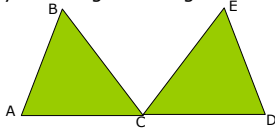
Homework: 5-2 worksheet

1) Evaluate: $81 - (18-8)^2 \div 20$

2) Factor Completely: $8x^2 - 32x - 360$

3) Identify the congruent angles if $\triangle ABC \cong \triangle DEC$

Homework Check

p. 243 #24-27, 28-31 & 34

24) $\overline{AD} \perp \overline{BC}$

25) $\overline{AE} \cong \overline{EC}$; $\overline{BE} \perp \overline{AC}$; $\overline{AB} \cong \overline{BC}$

26) $\overline{BF}$ is a median

27) $\angle CAD \cong \angle DAB$

28) Any triangle

29) In a right triangle, the altitudes intersect at the vertex of the right angle.

30) No such triangle
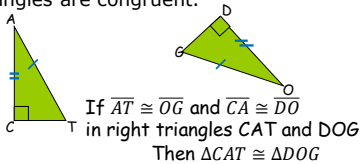
31) An obtuse triangle

Homework Check

34) If an angle bisector of an angle is also an altitude, then the triangle is isosceles.

Chapter 5…?

- We will be using a supplemental text for Chapter 5.
  - Each night, supplemental "notes" will be provided on my website.
    - Homework Calendar -> Handouts
  - In this text, an important theorem was covered in the previous chapter that we will add to our notes now!

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Theorem

- The ONE time that SSA works, and we call it something else…
- Hypotenuse-Leg (HL) Theorem
  - If the hypotenuse and leg of a right triangle are congruent to the hypotenuse and leg of a second right triangle, then the two triangles are congruent.

If $\overline{AT} \cong \overline{OG}$ and $\overline{CA} \cong \overline{DO}$ in right triangles CAT and DOG

Then $\triangle CAT \cong \triangle DOG$

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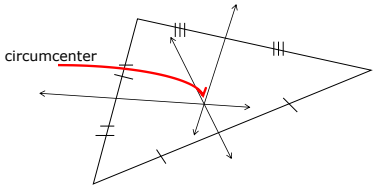_____

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§5.2 Bisectors of a Triangle

- Lines that intersect in the same point are **concurrent** lines
- The point they intersect at is called the **point of concurrency**

Point of concurrency

d

c

a

b

b, c, and d are concurrent

a, b, & c are not

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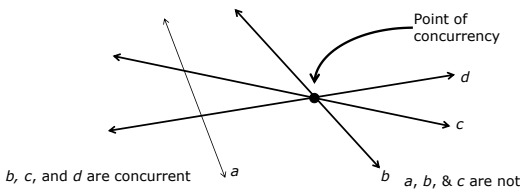
Circumcenter

- The circumcenter is the point of concurrency of the perpendicular bisectors of a triangle.

circumcenter

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Concurrency of Perpendicular Bisectors of a Triangle Theorem

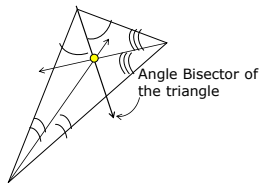- The circumcenter is equidistant from the vertices of the triangle.

$$FC = CI = CT$$

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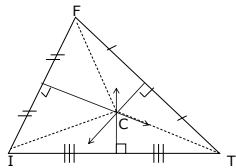
Angle Bisector of a Triangle

- The bisector of an angle of a triangle is called the angle bisector of the triangle.

Incenter

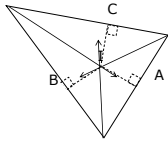- The incenter is the point of concurrency of the angle bisectors.

Angle Bisector of the triangle

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Concurrency of Angle Bisectors of a Triangle Theorem

◻ The incenter is equidistant from the sides of the triangle.

$$AI = BI = CI$$

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The Angle Bisectors of Triangle XYZ meet at point P.

◻ Which segments are congruent?
◻ Find *PT* and *PV*.

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