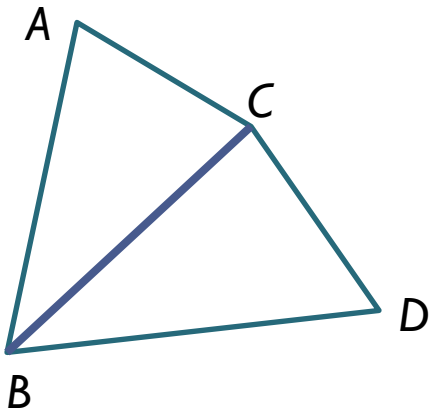
Friday, November 2, 2012

TISK Problems

1) Evaluate: $84 - (4 - 12)^2 \div (-16)$
2) Factor completely: $24x^2 - 11x - 28$
3) Identify all pairs of congruent angles if $\Delta ABC \cong \Delta DBC$.



We will have 3 Mental Math questions.

HOMEWORK: 5-3 Worksheet

Homework Check

1) A perpendicular bisector of a triangle __?__ passes through the midpoint of a side of the triangle. **always**

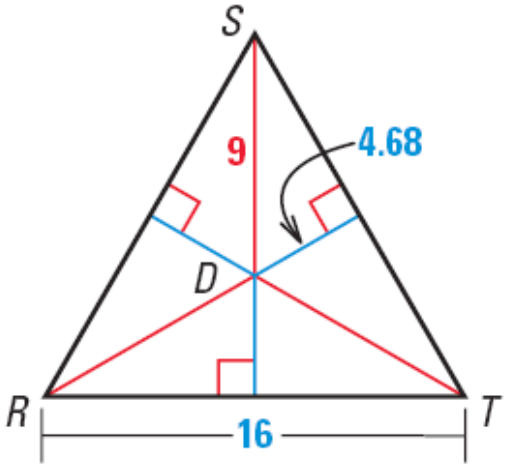
2) The angle bisectors of a triangle __?__ intersect at a single point. **always**

3) The angle bisectors of a triangle __?__ meet at a point outside the triangle. **never**

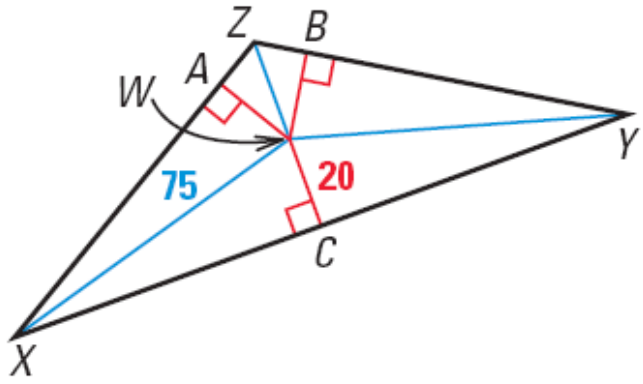
4) The circumcenter of a triangle __?__ lies outside the triangle. **sometimes**

In each case, find the indicated measure.

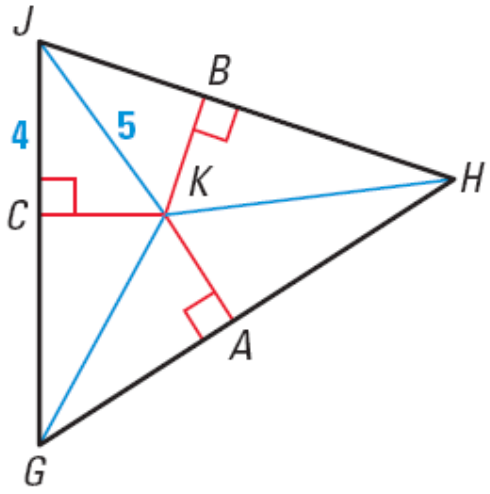
5) The perpendicular bisectors of $\triangle RST$ meet at point D. Find DR. **9**



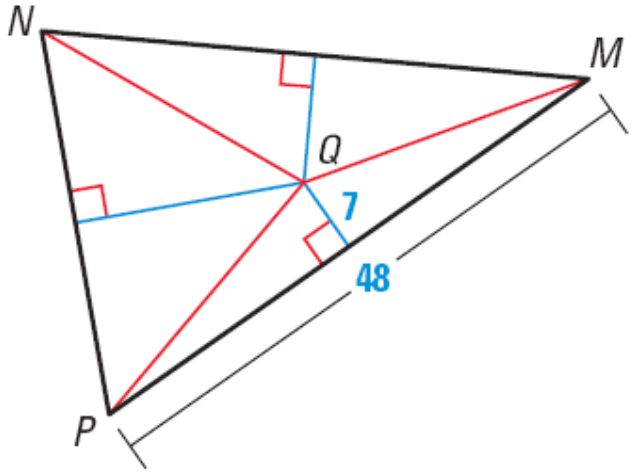
6) The angle bisectors of $\triangle XYZ$ meet at point W. Find WB. **20**



7) The angle bisectors of $\triangle GHJ$ meet at point K. Find KB. **3**

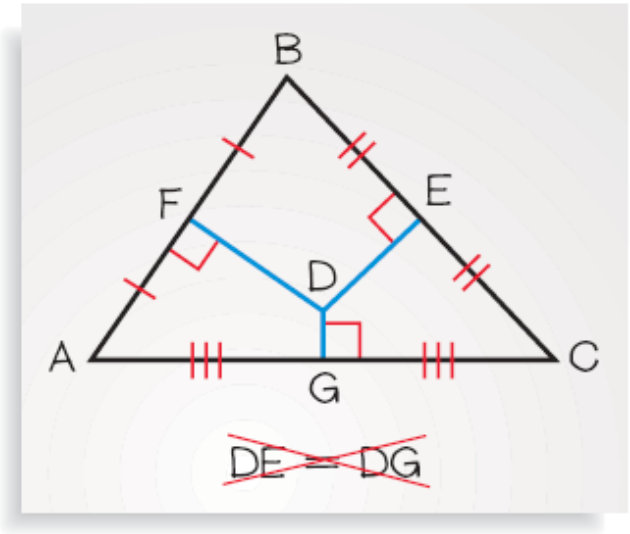


8) The perpendicular bisectors of $\triangle MNP$ meet at point Q. Find QN. **25**

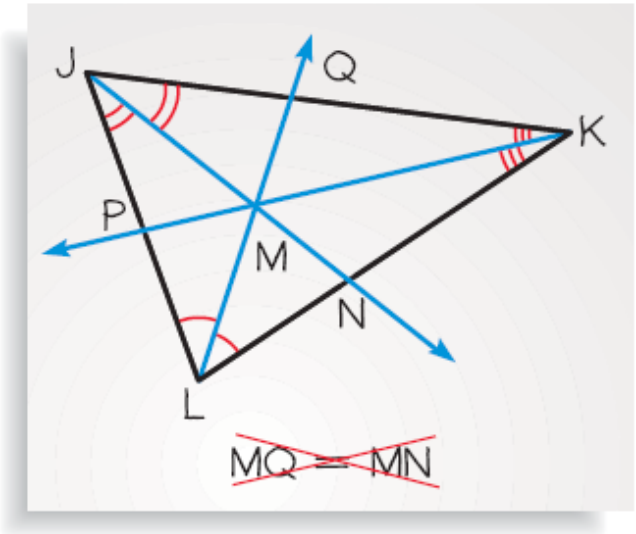


Explain why the student's conclusion is *false*. Then state a correct conclusion that can be deduced from the diagram.

9)



10)

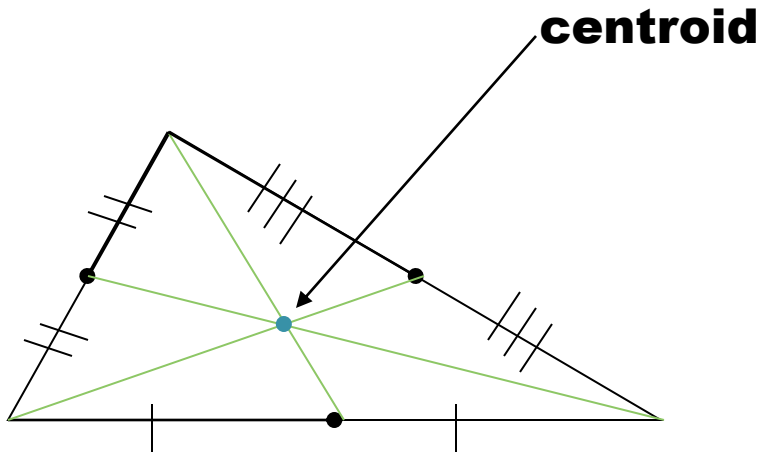


9) **The ⊥ bisectors of a △ intersect in a point that is equidistant from the vertices of the △, not the sides; *D* is equidistant from *A*, *B*, and *C*.**

10) **The ∠ bisectors of a △ intersect in a point that is equidistant from the sides of the △, but *MQ* and *MN* are not necessarily distances to the sides; *M* is equidistant from $\overline{JK}$, $\overline{KL}$, and $\overline{JL}$.**

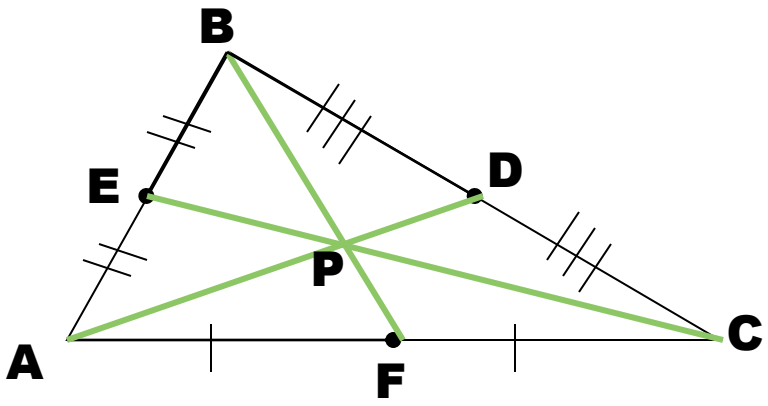
Medians of a Triangle

- The three medians of a triangle are concurrent.
- The point of concurrency of the medians is called the centroid.



Concurrency of Medians of a Triangle Theorem

- The centroid is two thirds of the distance from each vertex to the midpoint of the opposite side.



$$AP = \frac{2}{3}AD$$

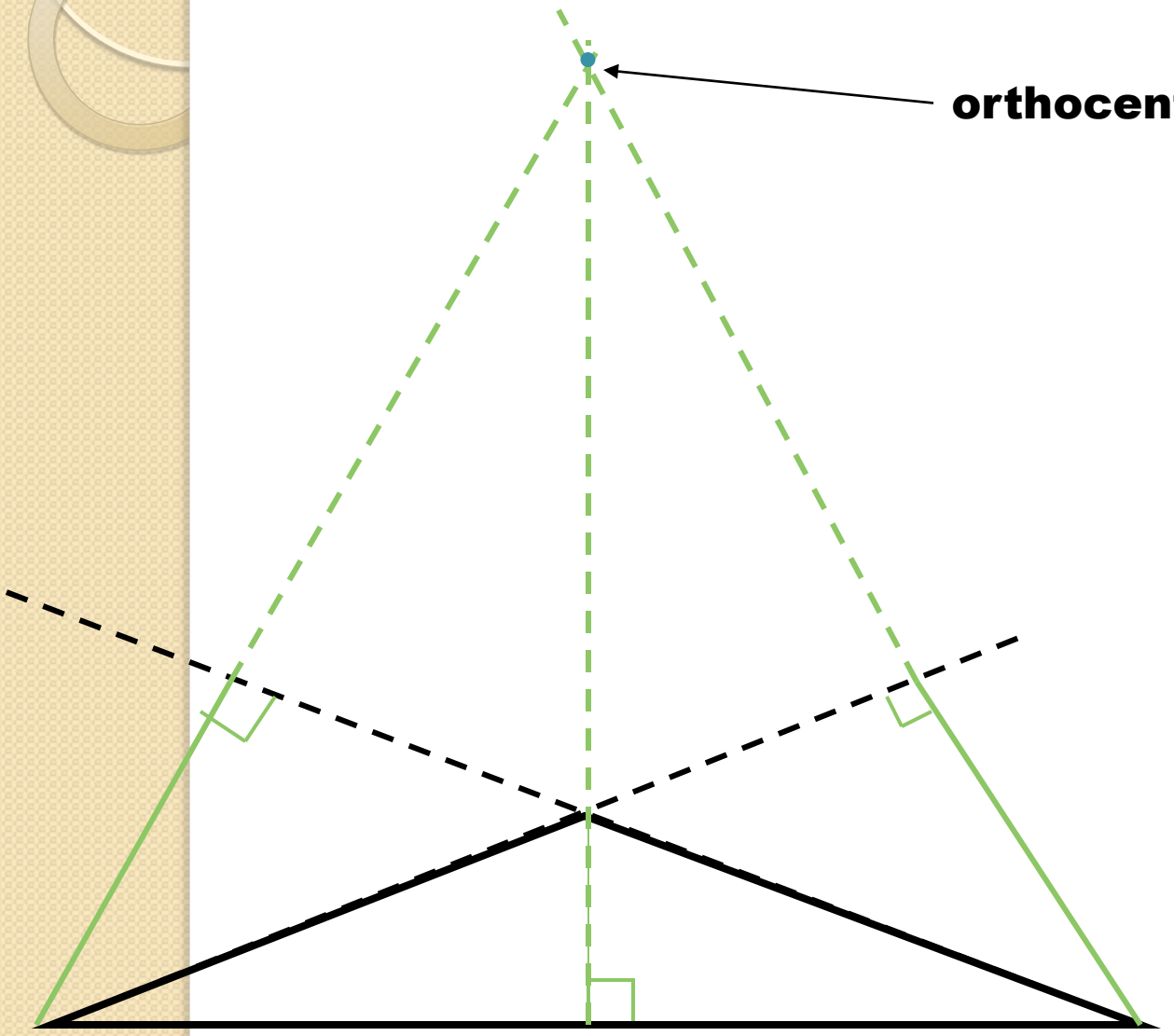
$$BP = \frac{2}{3}BF$$

$$CP = \frac{2}{3}CE$$

Note: The centroid can be used to balance a triangle.

Altitudes

- Altitudes of a triangle are concurrent.
- The point of concurrency is called the orthocenter of the triangle.



Orthocenters may occur:

- **Inside the triangle (acute triangles).**
- **Outside the triangle (obtuse triangles).**
- **Or ON the triangle (right triangles).**

Altitudes

- Altitudes of a triangle are concurrent.
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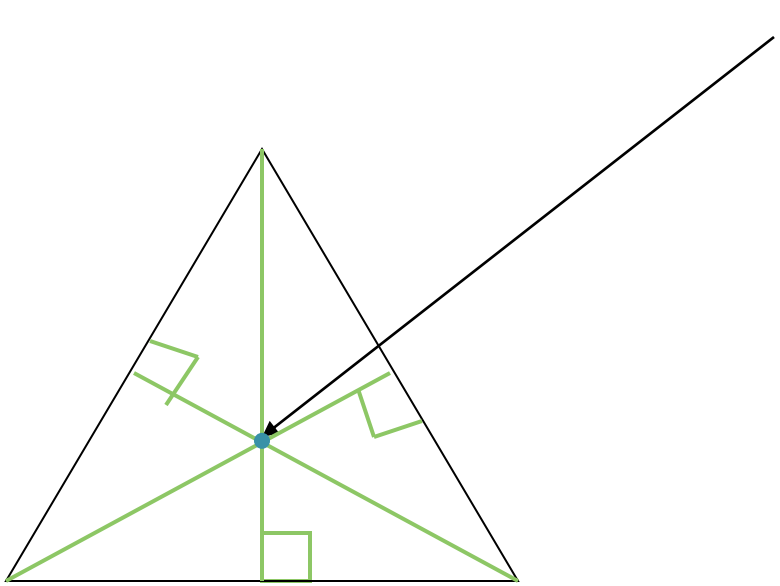

Orthocenters may occur:

- **Inside the triangle (acute triangles).**
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Altitudes

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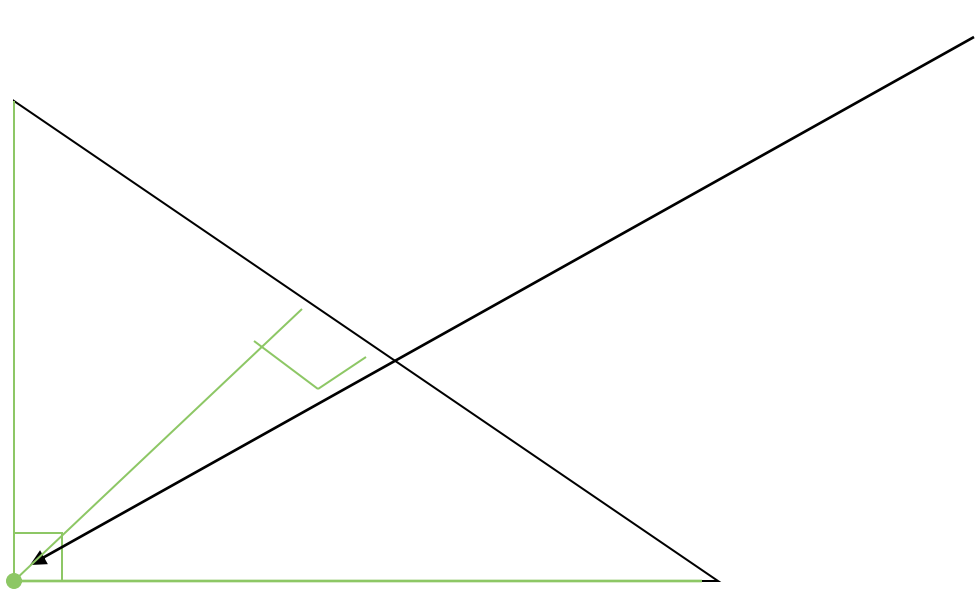


Orthocenters may occur:

•Inside the triangle (acute triangles).

•Outside the triangle (obtuse triangles).

•Or ON the triangle (right triangles).

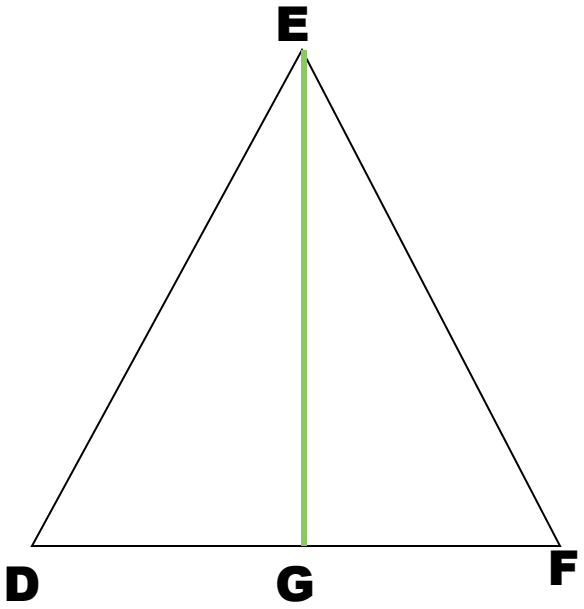
Concurrency of Altitudes of a Triangle Theorem

- The lines containing the altitudes of a triangle are concurrent.

(Not really much of a theorem, just states that Yes, indeed, altitudes are concurrent!)

Check Points

- Use the diagram shown and the given information to decide in each case whether $\overline{EG}$ is a perpendicular bisector, an angle bisector, a median, or an altitude of the triangle.



GIVEN:

a) $\overline{DG} \cong \overline{FG}$

b) $\overline{EG} \perp \overline{DF}$

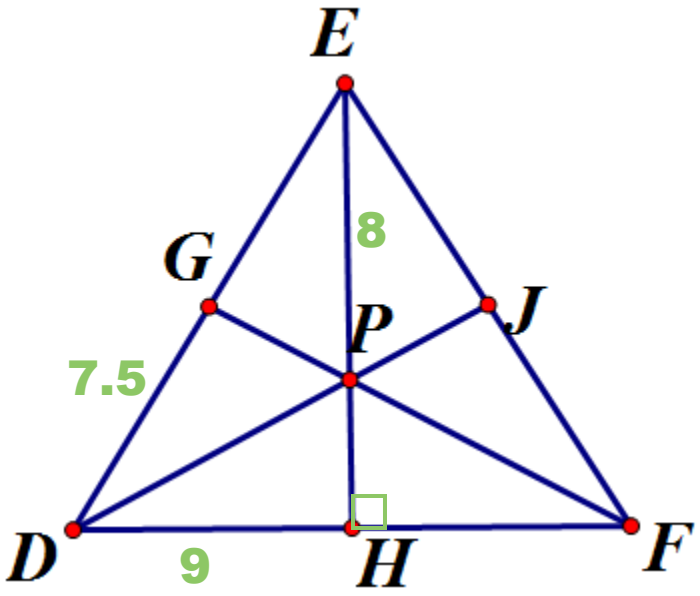
c) $\angle DEG \cong \angle FEG$

d) $\overline{EG} \perp \overline{DF}$ and $\overline{DG} \cong \overline{FG}$

e) $\Delta DGE \cong \Delta FGE$

Check Points

- *P* is the centroid of ΔDEF, $\overline{EH} \perp \overline{DF}$, *DH* = 9, *DG* = 7.5, *EP* = 8, and *DE* = *FE*.



a) Find *FH*.

b) Find *EH*.

c) Find *PH*.

d) Find the perimeter of ΔDEF

Next Week…

- Monday: Chapter 4 Test
- There will be proofs!

- Tuesday: Chapter 5 Quiz 1
- No Proofs!

How will you spend your weekend study time?
Option A: Study for Chapter 4 Test. (Finish 5-3 worksheet on Monday night and/or attend tutoring on Monday after school to talk about Chapter 5.)

Option B: Finish 5-3 Worksheet. (Study for Quiz 1 on Monday night and/or come to tutoring Monday to ask questions about Chapter 5.)