Solutions MattYoder 2016

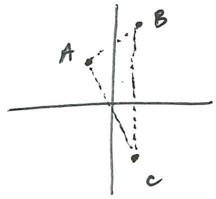
CO-C10b

Practice Assessment

$x_1\ y_1$ $x_2\ y_2$ $x_3\ y_3$

1. Find the coordinates of the centroid of triangle ABC with vertices located at A(-2,3) B(1,5) and C(2,-4)

"midpoint" of △ → "average" → $\left(\frac{x_1+x_2+x_3}{3}, \frac{y_1+y_2+y_3}{3}\right)$

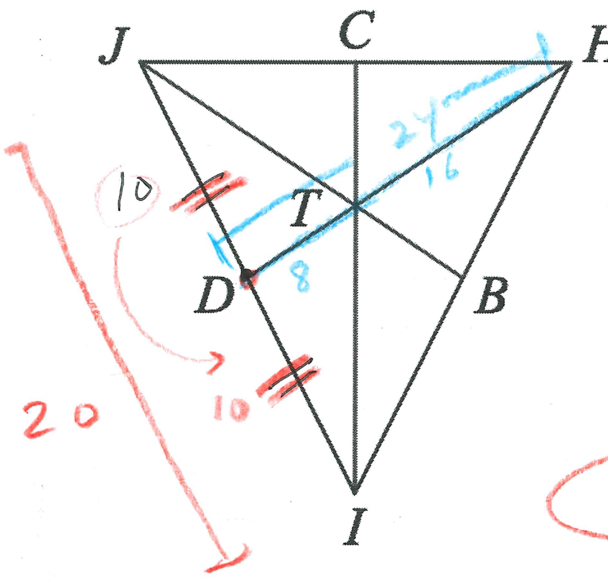


$\left(\frac{-2+1+2}{3}, \frac{3+5+-4}{3}\right)$

$\left(\frac{1}{3}, \frac{4}{3}\right)$

2. JB, HD, and IC are medians of ΔJHI. If DH=24 and JD=10, find the lengths of DT and JI.

cross @ centroid
centroid splits into 2:1 ratio
median connects vertex to midpoint

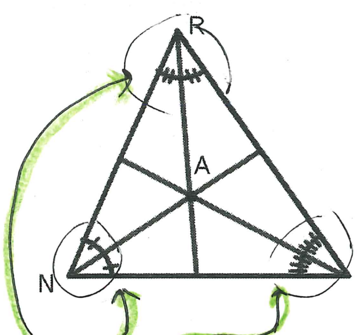


$\frac{24}{3} = 8$. so DH = 8 + 2·8 = 24
8 + 16
short long

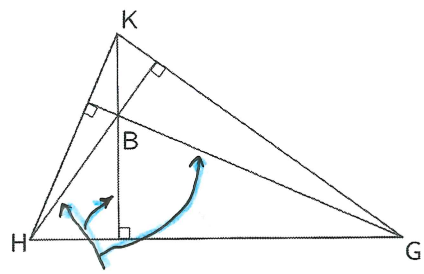
DT = 8

JI = 20

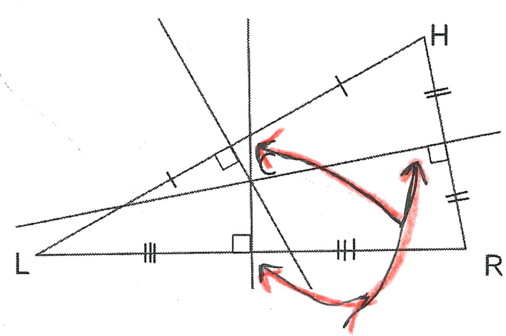
3. Identify which points among A, B, and C are the the orthocenter, circumcenter, and incenter. Explain how you know for each classification.



Angles are being bisected, so these are Angle Bisectors. they cross @ the incenter



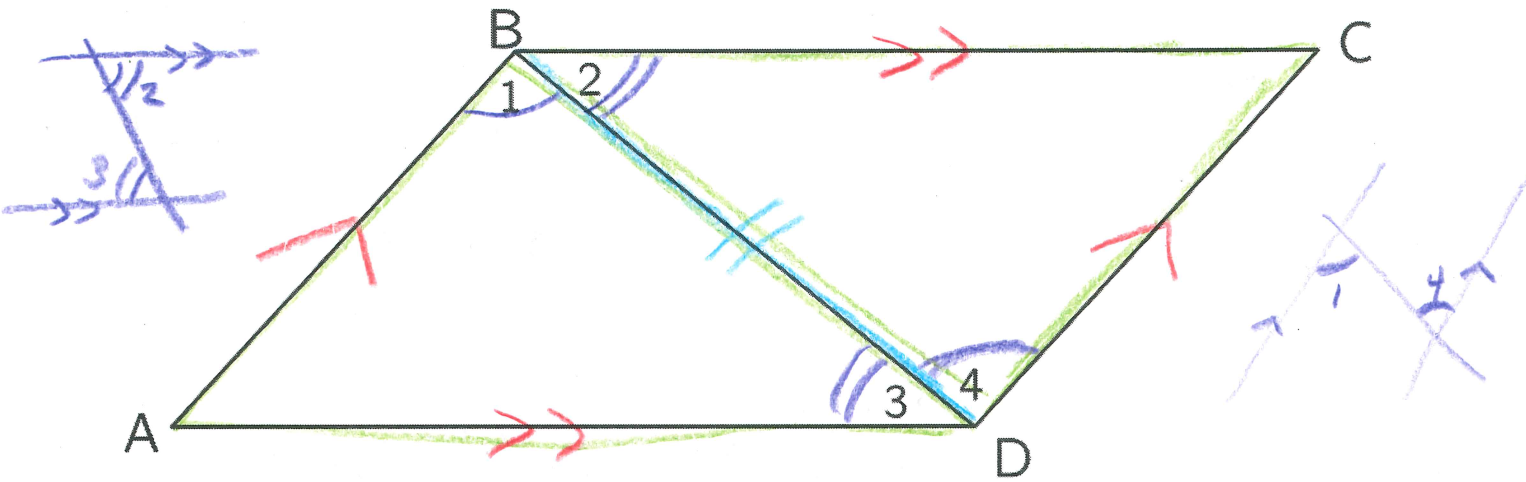
these are altitudes, so B must be the orthocenter



these lines cross the midpoints @ 90° so they are perpendicular bisectors, which cross @ the circumcenter

SRT-B5b

Complete the proof using the choices provided. Use as many steps as needed.



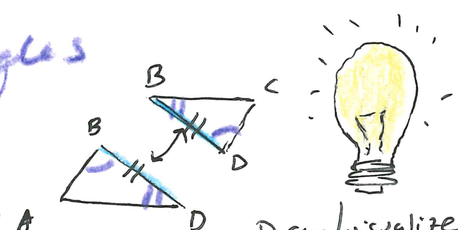
GIVEN: $\overline{AB} \parallel \overline{CD}$ and $\overline{BC} \parallel \overline{DA}$

PROVE: $\overline{AB} \cong \overline{CD}$

Mark the given if it is not already!

Statements	Reasons
1. $\overline{AB} \parallel \overline{CD}$ and $\overline{BC} \parallel \overline{DA}$	1. Given
2. $\overline{DB} \cong \overline{BD}$	2. Reflexive Property
3. $\angle 1 \cong \angle 4$ and $\angle 2 \cong \angle 3$	3. Alternate Int. Angles
4. $\triangle ABD \cong \triangle CDB$	4. ASA
5. $\overline{AB} \cong \overline{CD}$	5. CPCTC

Q.E.D.



Draw/visualize each △ separately. order matters!!

Choices:

Vertical Angles | Alternate Interior Angles | ASA | AAS | SSS | HL

Reflexive Property | $\angle 1 \cong \angle 2$ and $\angle 3 \cong \angle 4$ | $\angle 1 \cong \angle 4$ and $\angle 2 \cong \angle 3$ | Def of bisect

$\overline{DB} \cong \overline{BD}$ | $\angle A \cong \angle C$ | $\overline{AB} \cong \overline{CD}$ | $\triangle ABD \cong \triangle CDB$ | $\triangle BDA \cong \triangle BDC$

CPCTC | AAA | SSA

Never going to be used!

Note wrong order