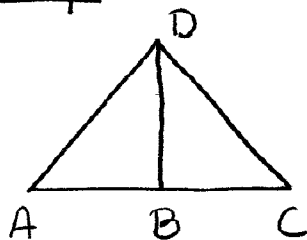


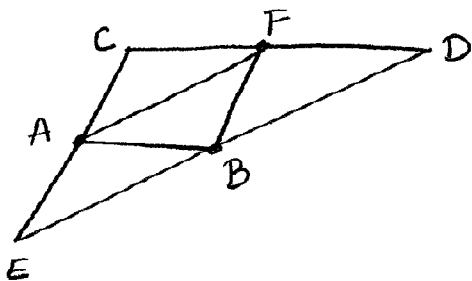
Geometry Test Review Chapter 5

Proofs:



1) G: $\angle A \cong \angle C$
 $\overline{DB} \perp \overline{AC}$
 P: $\overline{DB} \perp \text{bis. } \overline{AC}$

2) G: $\overline{DB} \perp \text{bis. } \overline{AC}$
 P: $\overline{DB} \not\perp \text{bis. } \angle ADC$
 (special case, not the rule)

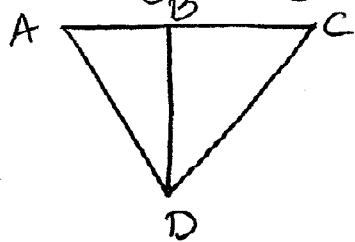


3) G: A, B, F are midpts of $\triangle CDE$
 P: $\overline{AB} \cong \overline{FD}$

Algebra Problems, etc.

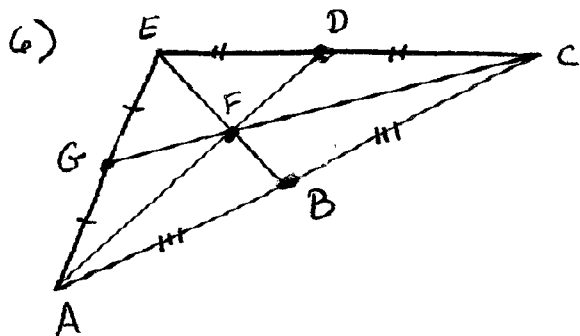
4) Which concurrency points lie strictly in the interior of a $\triangle$?

5) Using the given information, name special segment $\overline{BD}$



a) $\overline{BD} \perp \overline{AC}$ b) $\angle ADB \cong \angle CBD$

c) $\triangle DBC \cong \triangle DBA$ d) $\frac{\overline{BD} \perp \overline{AC}}{\overline{AB} \cong \overline{CB}}$

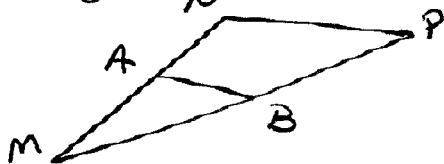


a) $AD = 24$, $AF = ?$, $FD = ?$

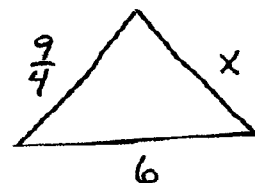
b) $FB = 4$, $EF = ?$, $EB = ?$

c) $FG = x + 4$, $CG = 5x + 9$, $CF = ?$

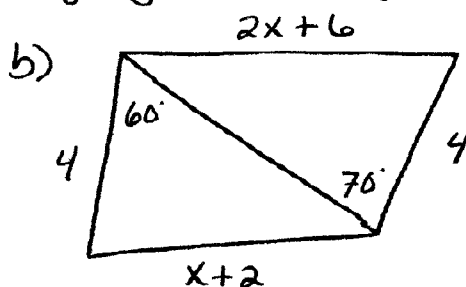
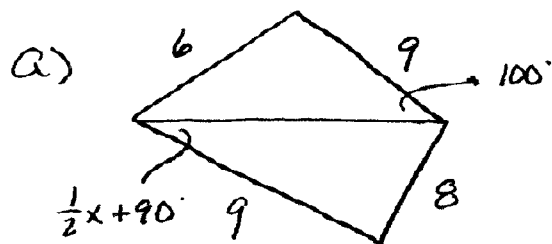
7) Verify that $\overline{AB}$ is a midsegment if $M(-2, -2)$, $N(-1, 4)$, $P(2, 3)$



8) Find restrictions on x so that the Δ exists:



9) Find restrictions on x by applying the Hinge Thm / Converse.



Answers:

1) Statements Reasons

- 1) $\overline{DB} \perp \overline{AC}$
- 2) $\angle ABD \cong \angle CBD$ right $\angle$'s
- 3) $\angle ABD \cong \angle CBD$
- 4) $\overline{DB} \cong \overline{DB}$
- 5) $\angle A \cong \angle C$
- 6) $\triangle ABD \cong \triangle CBD$
- 7) $\overline{AB} \cong \overline{CB}$
- 8) $\overline{DB} \perp$ bis. $\overline{AC}$

- 1) given
- 2) 2 $\perp$ lines intersect to form 4 rt. $\angle$'s
- 3) all right $\angle$'s are $\cong$
- 4) Reflex. p.o.c.
- 5) given
- 6) AAS $\cong$ thm
- 7) CPCTC
- 8) def $\perp$ bis.

Answers:

2)	<u>Statements</u>	<u>Reasons</u>
1)	$\overline{DB} \perp \text{bis. } \overline{AC}$	1) given
2)	$\overline{BA} \cong \overline{BC}$	2) def $\perp$ bis.
3)	$\overline{AD} \cong \overline{CD}$	3) $\perp$ bis. thm
4)	$\angle A \cong \angle C$	4) base $\angle$'s thm
5)	$\triangle ABD \cong \triangle CBD$	5) SAS $\cong$ post.
6)	$\angle ADB \cong \angle CDB$	6) CPCTC
7)	$\overline{DB} \angle \text{bis. of } \angle ADC$	7) def $\angle$ bis.

*NOTE: not all $\perp$ bisectors are also $\angle$ bisectors.

Answers:

3)	<u>Statements</u>	<u>Reasons</u>
1)	A, B, F midpts	1) given
2)	$\overline{CF} \cong \overline{FD}$	2) def midpt.
3)	$CF = FD$	3) def $\cong$
4)	$\overline{AB}$ midsegment	4) def of midsegment
5)	$AB = \frac{1}{2}(CD)$	5) midsegment thm
6)	$CD = CF + FD$	6) seg + post.
7)	$CD = FD + FD$	7) substitution poe.
8)	$CD = 2(FD)$	8) combine like terms
9)	$AB = \frac{1}{2}(2(FD))$	9) substitution poe.
10)	$AB = FD$	10) simplification
11)	$\overline{AB} \cong \overline{FD}$	11) def $\cong$

Answers:

4) centroid, incenter

- 5) a) altitude
b) none (can you even have Δ 's in this case?)
c) all special segs.
d) $\perp$ bisector

- 6) a) $AF = 16$, $FD = 8$
b) $EF = 8$, $EB = 12$
c) $CF = 11$

7) $m's = -\frac{1}{3}$; $AB = \frac{\sqrt{10}}{2}$, $NP = \sqrt{10}$
* see notes for conclusions

8) $\frac{15}{4} < x < \frac{33}{4}$

9) a) $20^\circ < x < 180^\circ$

b) $x > -2$ (think about it!!!)