																	,											
L	A	S	T		N	A	M	E									,	F	I	R	S	T		N	A	M	E	

Homework H06
MATH 3110/5110 (Barsamian)
Due at the start of class Fri March 20, 2020

Problem:	1	2	3	4	5	6	Total	Rescaled
Your Score:								
Possible:	25	25	25	25	25	25	100	10

Notice that there are actually 150 points possible on this homework assignment. So your rescaled score can be as high as 15 points. Any points scored over 10 will be considered as extra credit points.

Suggested Exercises for the eighth, ninth, and tenth weeks: See the Course Web Page

[1] (4.3#2)
Given ΔABC in a metric geometry which satisfies PSA and points D, F with $B - C - D$ and $A - F - B$, prove that there exists $E \in \overleftrightarrow{DF}$ such that $A - E - C$ and $D - E - F$.

[2] (4.4#4) Prove Theorem 4.4.6:
Given ΔABC in a Pasch Geometry, If $A - P - C$ then $P \in \text{int}(\angle ABC)$ and therefore, $\text{int}(\overline{AC}) \subset \text{int}(\angle ABC)$.

[3] (4.4#15) Prove Theorem 4.4.10: In a Pasch Geometry, $\text{int}(\Delta ABC)$ is convex.

[4] (4.5#3) Prove Theorem 4.5.3: Given a quadrilateral in a Pasch Geometry, the following are equivalent
(1) The quadrilateral is convex.
(2) Each vertex of the quadrilateral is contained in the interior of the opposite angle.

[5] (Section 5.1 concepts) Let $A = (0,5),\ B = (0,1),\ C = (3,4)$
(a) Consider A, B, C as points in the Euclidean plane. Draw $\angle ABC$ and find $m_E(\angle ABC)$
(b) Consider A, B, C as points in the Poincaré plane. Draw $\angle ABC$ and find $m_H(\angle ABC)$

[6] (5.1 # 1, 3) For each given set of three points A, B, C in the Poincaré Plane, do the following three things
i. Draw ΔABC. Make your drawing large and neat, and label important stuff.
ii. Find the measures of each of the angles of ΔABC. (For each angle, give an exact answer in symbols, and then a decimal approximation, rounded to 2 decimal places.)
iii. Find the sum of the measures of the angles of ΔABC (Just give a decimal approximation, rounded to 1 decimal place.)
(a) Let $A = (0,5),\ B = (0,1),\ C = (3,4)$
(b) Let $A = (0,5),\ B = (0,3),\ C = \left(2, \sqrt{21}\right)$