Review for Comprehensive Test #2 on Thurs May 17, 2018

Topic 4 - Properties of Angle and Triangles (Chapter 2) **EXTRA = Extra questions on the back relating to that concept**

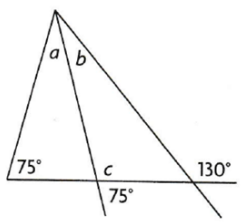
Concept #	Concept	Review Questions
17	2.1 / 2 /3 Find missing angle measures in a diagram of parallel lines cut by a transversal including triangles; Using angle properties prove that lines are parallel or not. **(C)**	**Pg 85 #1, 5 Pg 104 # 2 Pg 106 #5b, 8 Pg 111 #10b EXTRA BELOW**
18	2.1 /2 /3 Derive basic proofs involving angles in triangles and parallel lines as well as identify errors in a given proof **(C)**	**Pg 85 #6, P 106 #7, 9 EXTRA BELOW**
19	2.4 Find and prove missing angle measures in polygons **(C)**	**P106 #10 Pg 111 #10d EXTRA BELOW**
20	2.1-2.4Solve situational problems that involve angles, parallel and nonparallel lines with transversals and angles in triangles and polygons **(C)**	**EXTRA BELOW**
21	(Extra handouts) Derive proofs involving congruent triangles **(C)**	**EXTRA BELOW**

Topic 5- Trigonometry (Ch 3 & 4)

Concept #	Concept	Review Questions
22	Ch.3 and 4.1 /2 I can solve for a missing side or angle using law of sines or cosines (excluding ambiguous case) **(C)**	**Pg 129 #4, 5 Pg 154 # 7, 8 EXTRA BELOW**
23	Ch. 3 and 4 I can solve situational questions involving non right triangles **(C)**	**Pg 129 #7, 8, 9 Pg 154 #9-12 Pg 198 #4, 6**
24	4.3 / 4 I can illustrate and explain the possibilities for a given set of measurements for the ambiguous case. (C)	**Pg 175 # 1abc, 3abc , Pg 198 #2**

CONCEPT 17:

1. Determine the measures of the unknown angles.

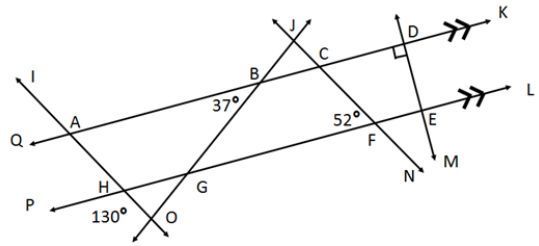


∠ a = _____

∠ b = _____

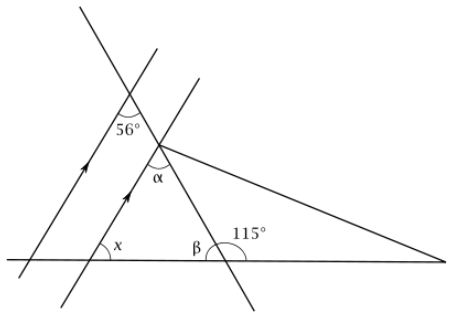
∠ c = _____

2.



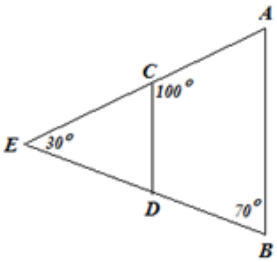
Find the value of : a) ∠PHA b) ∠JBC c) ∠QAH d) ∠DCF

3.

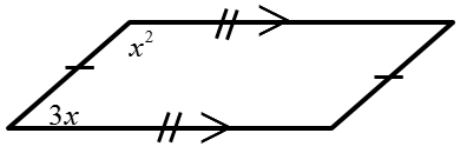


CONCEPT 18:

1. Prove that AB II CD.



CONCEPT 19: Determine the value of x



CONCEPT 20:

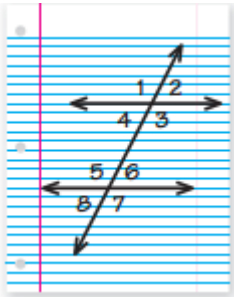
1.

The figure shows the angles used to make a double bank shot in an air hockey game.

a) Find x.

b) Can you still get the red puck into the goal if x is is increased by a little? By a lot? Explain

2. In the diagram below, what is the least number of Angle measures you need to know in order to find all of the unknown angles? Explain.

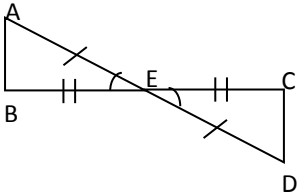


3. How many sides does a regular polygon have if the measure of an interior angle is 171?

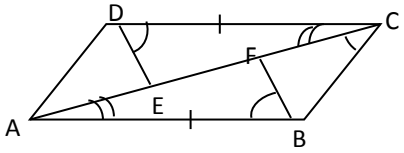
CONCEPT 21:

A. For each pair of triangles, tell which postulate, if any, can be used to prove the triangles congruent.

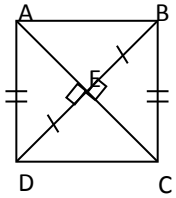
1. ΔAEB ≅ Δ___ by_____



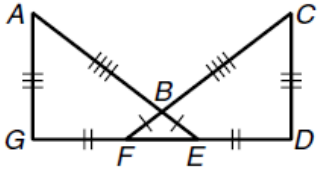
2. ΔCDE ≅ Δ___ by_____



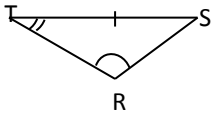
3. ΔDEA ≅ Δ____ by _____

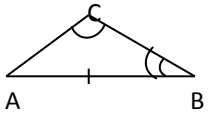


4. ΔAGE ≅ Δ_____ by_____

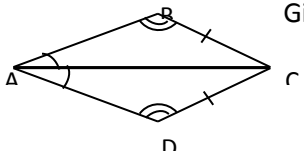


5. ΔRTS ≅ Δ_____ by _____



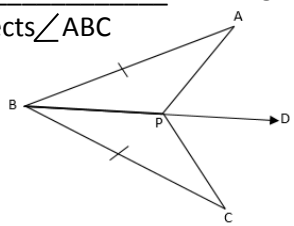


6. ΔABC ≅ Δ___by____

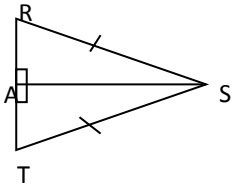


7. ΔBAP ≅ Δ_____

Given: $\overrightarrow{BD}$ bisects ∠ABC

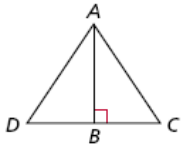


8. ΔSAT ≅ Δ_____ by ____



B. 1. Given: B is the midpoint of $\overline{DC}$. $\overline{AB} \perp \overline{DC}$

Prove: $\triangle ABD \cong \triangle ABC$



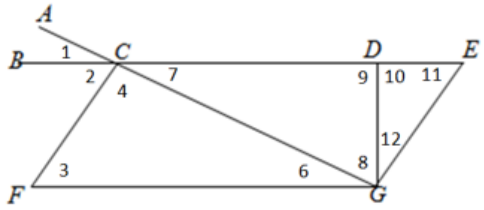
2. Given: $BE \parallel FG$

$\angle CFG = 70^\circ$

$\angle ACB = 36^\circ$

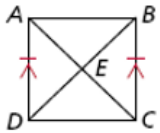
$\angle FGE = 110^\circ$

Prove: $\Delta CEG \cong \Delta GFC$



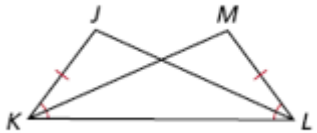
3. Given: $\overline{AD} \parallel \overline{BC}$, $\overline{AD} \cong \overline{CB}$

Prove: $\triangle AED \cong \triangle CEB$



4. Given $\overline{JK} \cong \overline{ML}$, $\measuredangle JKL \cong \measuredangle MLK$

Prove: $\measuredangle J \cong \measuredangle M$



CONCEPT 22. 1. Solve ΔABC where $\angle$ B=40, b = 27, c = 39.5 where angle A is acute.

SOLUTIONS:

CONCEPT 17: **1.** a = 30, b = 25, c = 105 2. $\measuredangle$ PHA = 50, $\measuredangle$ JBC = 37, $\measuredangle$ QAH = 130, $\measuredangle$ DCF = 52

CONCEPT 18:

STATEMENTS	REASONS
1. $\measuredangle E = 30^\circ$	1.Given
2. $\measuredangle ACD = 100^\circ$	2.Given
3. $\measuredangle B = 70^\circ$	3.Given
4. $\measuredangle A = 80^\circ$	4.Sum of Interior Angles in a Triangle are Supplementary
5. $\measuredangle ECD = 80^\circ$	5.Adjacent Angles in a Line are Supplementary
6. $\overline{AB} \parallel \overline{CD}$	6. Corresponding Angles are Congruent

CONCEPT 19: x = 12

CONCEPT 20: **1.** a) x = 64 b) Discuss **2.** Two angles. Discuss. **3.** 40 sides

CONCEPT 21: **A 1.** DEC by SAS **2.** ABF by ASA **3.** BEC by HL **4.** CDF by SSS **5.** CBA by AAS **6.** ADC by AAS **7.** BCP by SAS **8.** SAR by HL

B 1.

STATEMENTS	REASONS
1. B is the Midpoint of $\overline{DC}$	1.Given
2. $\overline{AB} \perp \overline{DC}$	2.Given
3. $\overline{DB} \cong \overline{BC}$	3.Definition of Midpoint
4. $\measuredangle DBA$ *and* $\measuredangle CBA$ *are right angles*	4.Definition of Perpendicular
5. $\measuredangle DBA \cong \measuredangle CBA$	5.Right Angles are Congruent
6. $\overline{AB} \cong \overline{AB}$	6. Reflexive Property
7. $\triangle ABD \cong \triangle ABC$	7. SAS

2

STATEMENTS	REASONS
1. $\overline{BE} \parallel \overline{FD}$	1.Given
2. $\measuredangle CFG = 70°$	2.Given
3. $\measuredangle ACB = 36°$	3. Given
4. $\measuredangle FGE = 110°$	4. Given
5. $\overline{CG} \cong \overline{CG}$	5. Reflexive Property
6. $\measuredangle 7 = 36°$	6. Vertically Opposite Angles are Congruent
7. $\measuredangle 6 = 36°$	7. Alternate Interior Angles of Parallel Lines are Congruent
8. $\measuredangle 11 = 70°$	8. Same Side Interior Angles of Parallel Lines are Supplementary
9. $\triangle CEG \cong \triangle GFC$	9. AAS

3.

STATEMENTS	REASONS
1. $\overline{AD} \parallel \overline{BC}$	1.Given
2. $\overline{AD} \cong \overline{CB}$	2.Given
3. $\measuredangle DAC \cong \measuredangle BCA$	3. Alternate Interior Angles of Parallel Lines are Congruent
4. $\measuredangle ADB \cong \measuredangle DBC$	4. Alternate Interior Angles of Parallel Lines are Congruent
5. $\triangle AED \cong \triangle DBC$	5. SAS

Note: In this proof you could have found that $\measuredangle AED \cong \measuredangle BEC$ by vertically opposite angles and then used AAS as your last step.

4.

STATEMENTS	REASONS
1. $\overline{JM} \cong \overline{ML}$	1.Given
2. $\measuredangle JKL \cong \measuredangle MLK$	2.Given
3. $\overline{KL} \cong \overline{KL}$	3. Reflexive Property
4. $\triangle JKL \cong \triangle MLK$	4. SAS
5. $\measuredangle J \cong \measuredangle M$	5. Corresponding parts of congruent triangles are congruent

<u>CONCEPT 22:</u> $\measuredangle C = 70.115°, \measuredangle A = 69.885°, a = 39.544$