Pre-Proof Study Guide

2.5 Objective: Use algebraic properties in logical arguments.

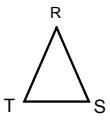
1. Solve 2x + 5 = 20 - 3x. Write a reason for each step.

2.6 Objective: Write proofs using geometric theorems.

2. Complete the proof

Given: RT = 5 RS = 5 $\overline{RT} \cong \overline{TS}$

Prove: $\overline{RS} \cong \overline{TS}$

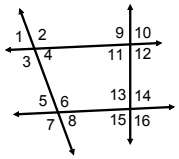


1.	1. Given
2. RS = RT	2. Transitive P.O.E.
3. RT = TS	3. Definition of congruent segments
4. RS = TS	4. Transitive P.O.E.
5.	5. Definition of congruent segments

3.1 Objective: Identify angle pairs formed by three intersecting lines.

Classify the angle pairs as corresponding, alternate interior, alternate exterior, consecutive interior, vertical or linear pair.

8. < 1 and <4
9. <6 and <13
10. <2 and <11
11. <8 and <4
12. <10 and <15
13. <5 and <6



3.2 Objective: Use angles formed by parallel lines and transversals.

14. If two parallel lines are cut by a transversal then the pairs of alternate exterior angles are congruent. Use the steps below to write a proof of the alternate exterior angles theorem.

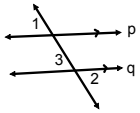
Given: p II q

Prove: <1 $\cong$ <2

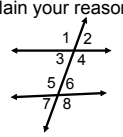
Steps to help you:

Show < 1 $\cong$ <3

Then show <1 $\cong$ <2



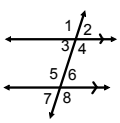
20. What angles are congruent to < 3. Explain your reasoning.



21. Given that line x is parallel to line y, explain the relationship between:

a. <2 and <7

b. < 2 and <5



Constructions:

22. Construct an angle and then copy that angle using a compass

2.7 Objective: Use properties of special pairs of angles.

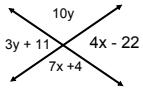
3. Complete the proof:

Given: <5 and <7 are vertical angles

Prove: <5 $\cong$ <7

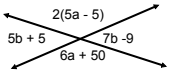
1.	1. Given
2. <5 and <6 are a linear pair <6 and <7 are a linear pair	2. Definition of a linear pair
3. <5 and <6 are supplementary <6 and <7 are supplementary	3.
4.	4. Congruent Supplements Theorem

Problem 4 Find the measure of x



5. Find the measure of y

6. Find the measure of a



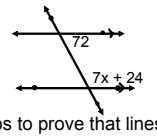
7. Find the measure of b

If 2 parallel lines are cut by a transversal, then the pairs of consecutive interior angles are supplementary.

15. What Given statement would you need in order to prove this theorem?

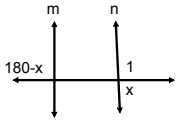
16. What would be the prove statement of your proof?

17. Find the value of x



3.3 Objective: Use angle relationships to prove that lines are parallel.

18. Find the value of x that makes m II n



19. Find the m<1

23. Construct a segment then bisect the segment

24. Construct a segment then using a compass construct a line parallel to the first one.

25. Graph the segment C(2,-5) and D(4,0) translate it (x,y) (x + 2,y + 3) Then reflect your new segment over y = -x