Name_____   Date_____

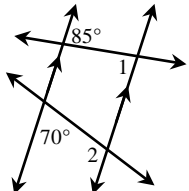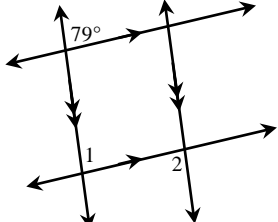# Chapter 3 & 4 – Final Review

Identify each statement as either true (T) or false (F) by circling the correct choice.

1) T   F   The slope of a line depends on which points on the line you choose to calculate it.

2) T   F   If two parallel lines are cut by a transversal then the alternate interior angles are supplementary.

3) T   F   You can determine the slope of a segment if you are given only the coordinates of its midpoint.

4) T   F   If any two lines are cut by a transversal then the alternate exterior angles are congruent.

5) T   F   If two lines are cut by a transversal forming pairs of congruent corresponding angles, congruent alternate interior angles, or congruent alternate exterior angles, then the lines are parallel.

6) T   F   If the graph of a line has slope q and y-intercept $(0, r)$ then the equation for the line is $y = qx + r$.

7) T   F   If lines x, y, and z are in the same plane, and $x \perp y$ and $y \perp z$, then $x \perp z$.

8) T   F   If two distinct lines on a graph have the same slope, then they are parallel.

9) T   F   If m is the slope of $\overline{AB}$, then the slope of the perpendicular bisector of $\overline{AB}$ is $\dfrac{-1}{m}$.

10) T   F   If lines x, y, and z are in the same plane, and $x \perp y$ and $y \perp z$, then $x \parallel z$.

For #11 & 12, find $m\angle 1$ and $m\angle 2$. Justify your answer with a postulate or theorem (abbreviations ok).

11)

$m\angle 1=$_____

Reason _____

$m\angle 2 =$_____

Reason _____

12)

$m\angle 1=$_____

Reason _____

$m\angle 2 =$_____

Reason _____

13) Find the midpoint of the segment connecting points (3,5) and (-1, 9).

14) One endpoint of $\overline{AB}$ is $A(-1, 9)$. The midpoint is $(-3, 6)$. Find the coordinates of the other endpoint.

15) In quadrilateral *ABCD*, with the given coordinates, are the diagonals perpendicular? <u>Show</u> work and <u>explain</u> your reasoning.

A(2, 5)
B(3, 2)
C(4, 8)
D(– 9, 10)

16) Write the equation in slope-intercept form of the line through point *B*(4,7) and perpendicular to the line: $4x + 2y = 8$.

17) Write the equation in slope-intercept form of the line that is the **perpendicular bisector** of $\overline{AB}$. Show all work for full credit.
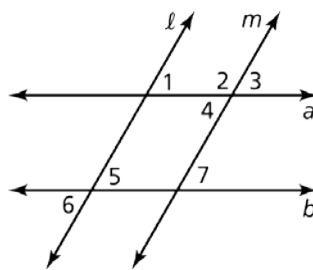
   A(9,– 1) and *B*(1,7)

18) What is the equation in slope-intercept form of the line parallel to $y = 2x + 3$ that contains (4, 6)?

Complete the following proof.

19)   Given: $a \parallel b$

$\angle 5$ is supplementary to $\angle 2$

Prove: $l \parallel m$

Statement	Reasons
1. $a \parallel b$	_____
2. $\angle 5$ is supplementary to $\angle 2$	_____
3. $\angle 1 \cong \angle 5$	_____
4. $\angle 1$ is supplementary to $\angle 2$	_____
5. _____	_____

20) Solve for x and y: (4 pts)

$-8x + y = -17$ and $5x - 3y = -6$

Identify each statement as either true (T) or false (F) by circling the correct choice

21) T   F   A triangle with all the sides equal in measure is acute.

22) T   F   The capital letters CPCTC are an abbreviation for the phrase "corresponding parts of congruent triangles are congruent."

23) T   F   The sum of the measures of the three angles of an obtuse triangle is greater than the sum of the measures of the three angles of an acute triangle.

24) T   F   If the base angles of an isosceles triangle each measure 37°, then the vertex angle has a measure of 106°.

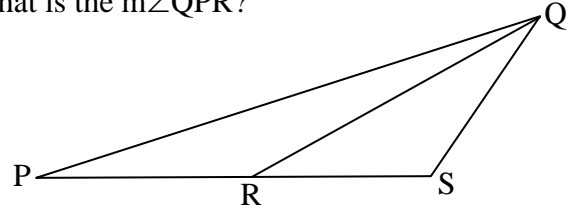25) T   F   If a triangle has two angles of equal measure, then the third angle is obtuse.

26) T   F   If $\triangle$DGO is congruent to $\triangle$TRA, then $\overline{DG}$ is congruent to $\overline{TA}$.

27)   T   F   The largest side of a triangle is opposite the smallest angle.
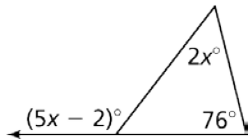
28) Find the lengths of the missing sides. SHOW WORK.!

$3x - 0.6$

$x + 0.1$

$x + 2.4$
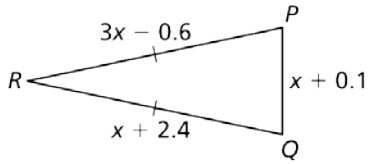
29) PR = QR and QS=RS. If the m∠RSQ = 130°, what is the m∠QPR?

30) Find the measure of the missing variable.
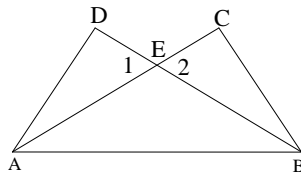

$2x°$

$(5x - 2)°$

$76°$

Provide each missing reason or statement in the proof.

31) Given: $\angle D \cong \angle C$

$\overline{DE} \cong \overline{EC}$

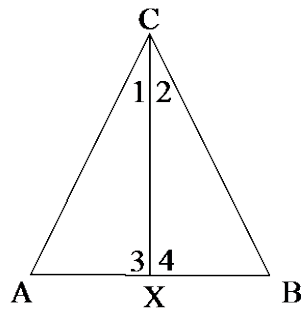Show: $\overline{AE} \cong \overline{BE}$

Flow-chart Proof:

_____ $\cong$ _____

32) Given: $\angle 1 \cong \angle 2$
       $\angle 3 \cong \angle 4$
   Prove: $\overline{AC} \cong \overline{BC}$

Statements		Reasons
1.	$\angle 1 \cong \angle 2$	1. _____
2.	$\angle 3 \cong \angle 4$	2. _____
3.	$\overline{CX} \cong \overline{CX}$	3. _____
4.	$\triangle AXC \cong \triangle BXC$	4. _____
5.	$\overline{AC} \cong \overline{BC}$	5. _____

33) Write a proof.
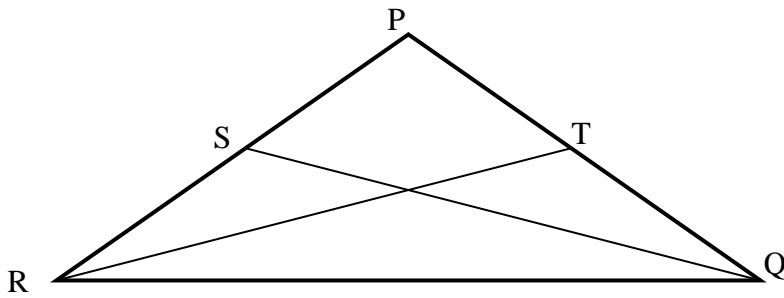
Given: $\overline{PR} \cong \overline{PQ}$

$\overline{PT} \cong \overline{PS}$

Prove: $\overline{QS} \cong \overline{RT}$

34) Given: ∠ZWX ≅ ∠YXW, ∠ZXW ≅ ∠YWX
Prove: ΔZJW ≅ ΔYJX