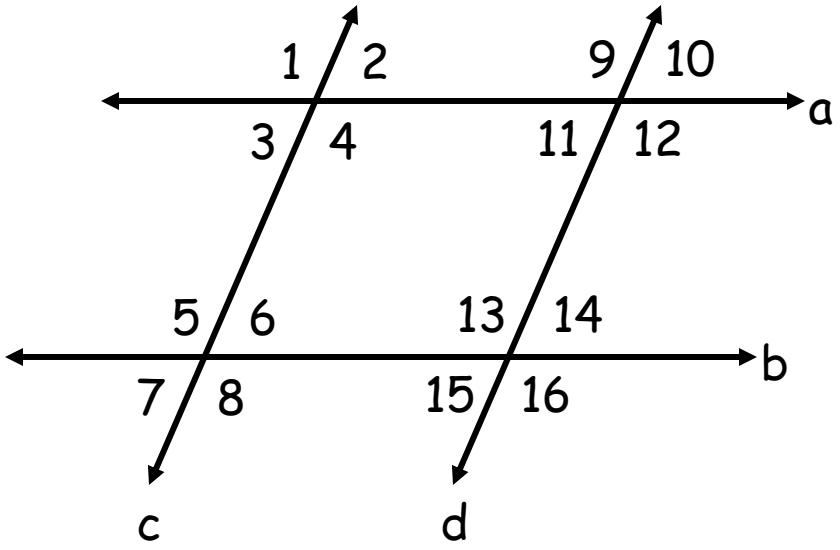
Station 1

You must complete the following proofs. Be sure to copy down the entire proof on your answer sheet.

1.

Given: a ll b; c ll d

Prove: m∠3 = m∠15



2.

Given: a ll b; m∠3 = m∠15

Prove: c ll d

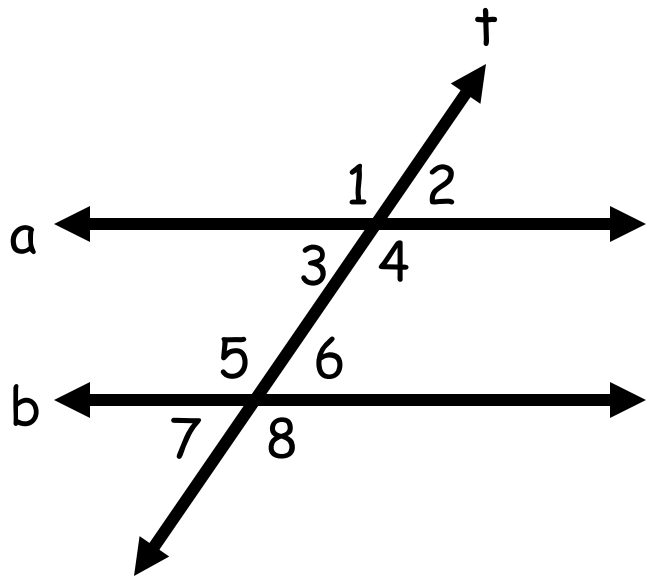
Puzzle Proof – Using the Statement and Reason cards found in each envelope, put the steps to the proof in order.
There will be several cards not used.

Station 2

Statements	Reasons

Given: $m\angle 2 + m\angle 8 = 180$

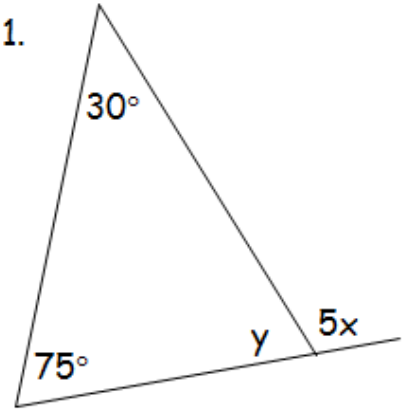
Prove: a ll b



Station 3

Algebra Connection – Complete each problem. Show all work, equations, and the diagram on your answer sheet. Find the indicated variables.

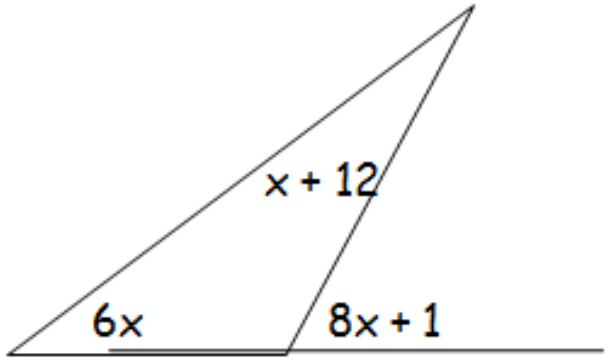
1.



x = _____

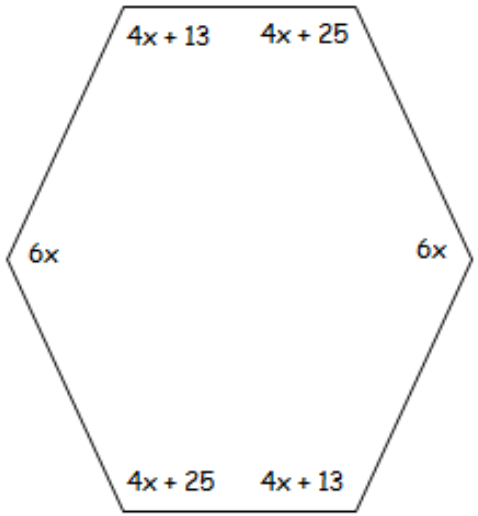
y = _____

2.



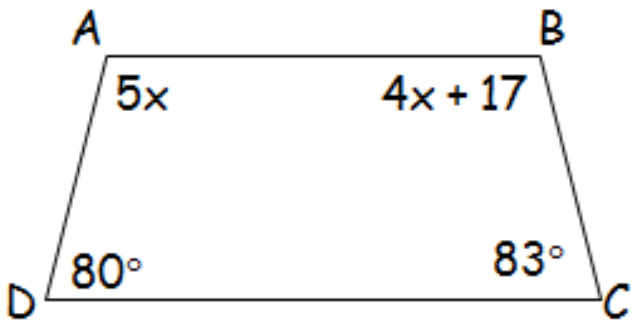
x = _____

3.



x = _____

4.



x = _____

Is AB ∥ DC? _____

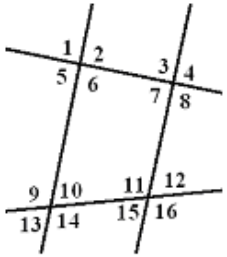
Is AD ∥ BC? _____

Station 4

Answer the following questions.

1.)

Directions: Write the letter of the pair of described angles.



Alternate Interior Angles _____ A. ∠10 and ∠11

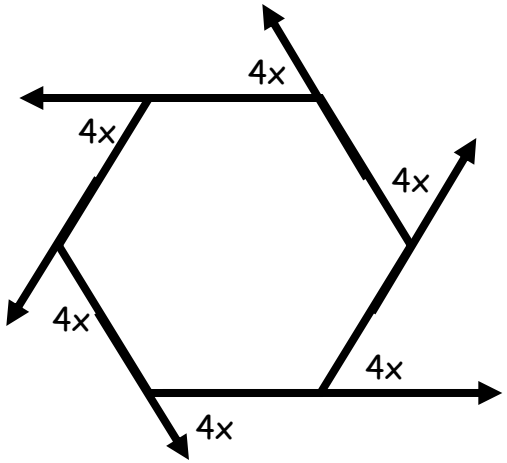
Same-side Interior Angles _____ B. ∠6 and ∠3

Corresponding Angles _____ C. ∠16 and ∠6

No Relationship _____ D. ∠10 and ∠2

2.) x = _____

Is this a regular polygon?_____



3. The sum of the interior angles of this polygon is 720 degrees.

How many sides does this polygon have? _____

What is the name of this polygon? _____

What is the sum of the exterior angles of the polygon? _____

4. Each interior angle of a regular polygon has a measure of 150 degrees.

How many sides does this polygon have? _____

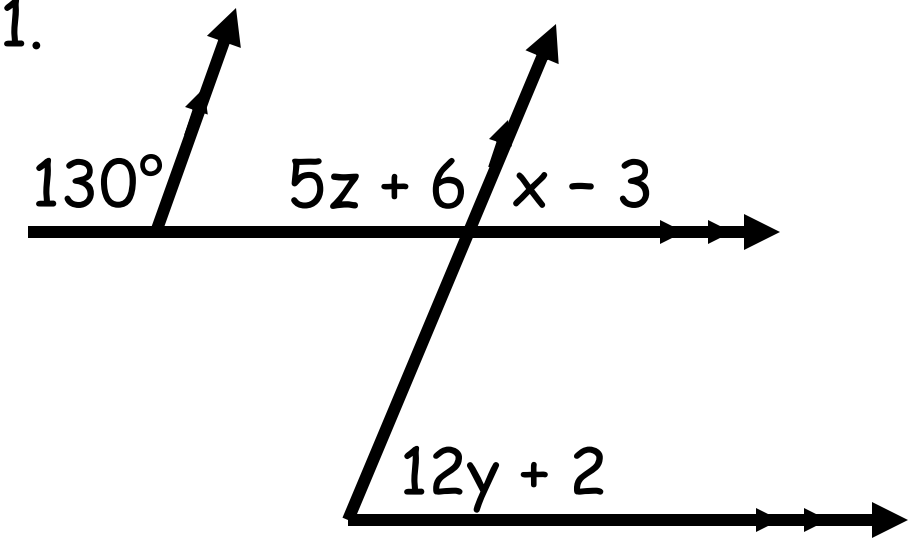
What is the name of this polygon? _____

What is the sum of the interior angles of the polygon? _____

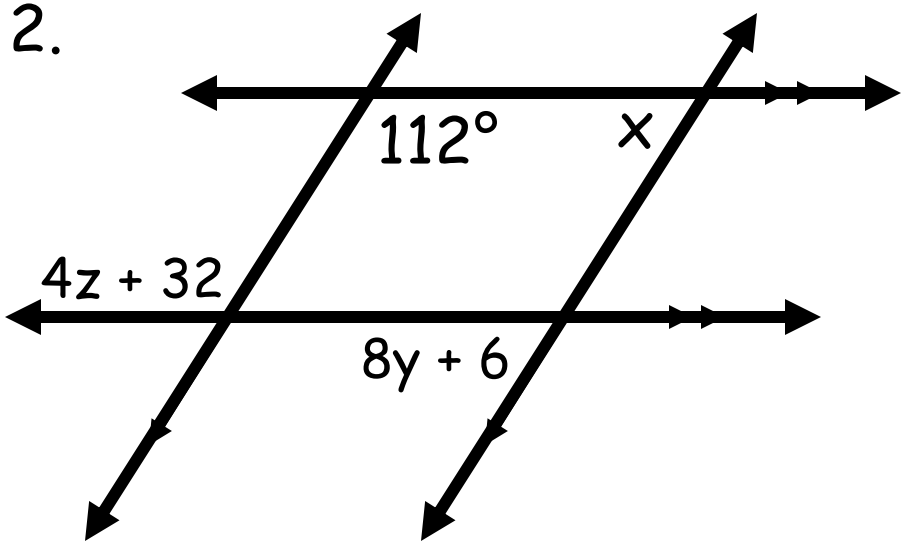
Station 5

Algebra Connection – Complete each problem. Show all work, equations, and the diagram on your answer sheet. Find the indicated variables.

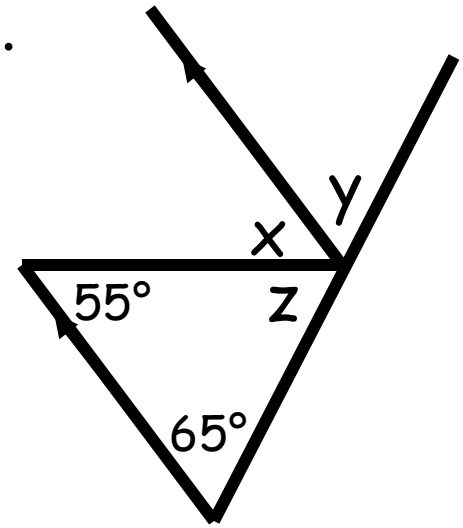
1.



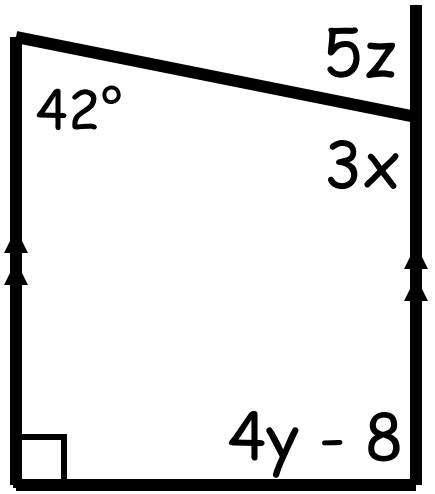
2.



3.

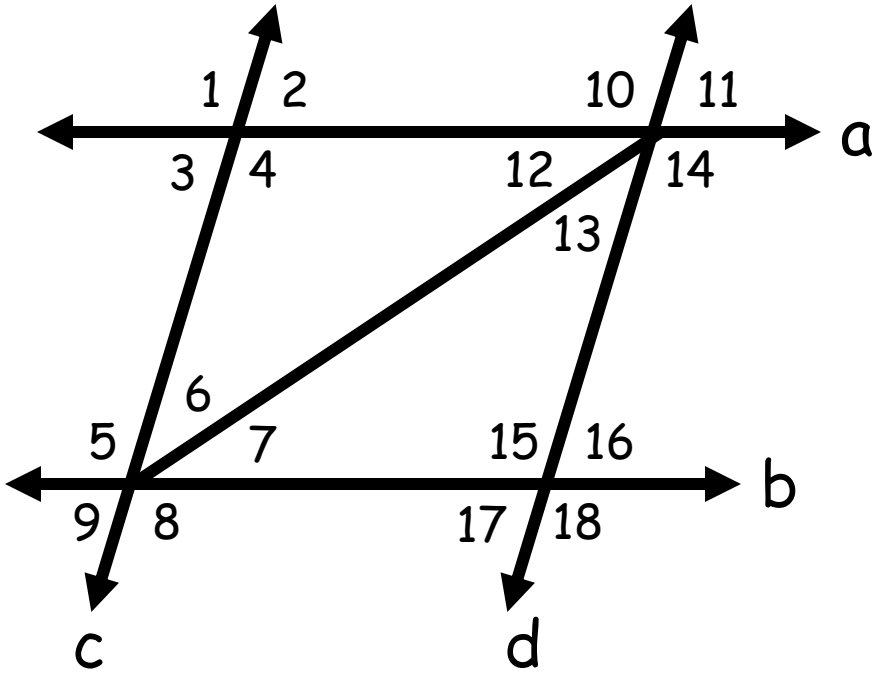


4.



Station 6

Based on the given information determine which lines, if any, are parallel. If any lines are parallel, state a justification.



Example:

A.) $m\angle 7 = m\angle 12$

Answer: a ll b because "if two lines are cut by a transversal and alternate interior angles are congruent, then the lines are parallel."

1.) $m\angle 1 = m\angle 10$

2.) $m\angle 4 = m\angle 5$

3.) $m\angle 10 = m\angle 14$

4.) $m\angle 4 + m\angle 12 + m\angle 13 = 180$

5.) $m\angle 12 + m\angle 13 + m\angle 14 = 180$

6.) $m\angle 5 = m\angle 18$

7.) $m\angle 4 + m\angle 6 = 180$

8). $m\angle 1 = m\angle 15$

9). $m\angle 1 = m\angle 4$

10.) $m\angle 9 = m\angle 17$

a ll b	Given	Given	Given	Vertical angles are congruent
a ll b	Substitution			Vertical angles are congruent
$m\angle 5 = m\angle 8$	Substitution			Vertical angles are congruent
$m\angle 3 = m\angle 2$	$\angle 3$ and $\angle 5$ are supplementary			
$m\angle 1 = m\angle 5$	$\angle 1$ and $\angle 2$ are supplementary			If two lines are cut by a transversal and same side interior angles are supplementary, then the lines are parallel.
$m\angle 6 = m\angle 9$	$m\angle 6 = m\angle 2$			
$m\angle 6 = m\angle 7$	$m\angle 9 = m\angle 7$			If two parallel lines are cut by a transversal, then same side interior angles are supplementary.
$m\angle 6 = m\angle 3$	Subtraction			
$m\angle 2 + m\angle 8 = 180$	Subtraction			If two parallel lines are cut by a transversal, then corresponding angles are congruent.
$m\angle 1 + m\angle 7 = 180$	Definition of Supplementary Angles			
$m\angle 3 + m\angle 5 = 180$	Angle Addition Postulate			If two lines are cut by a transversal and corresponding angles are congruent, then the lines are parallel.