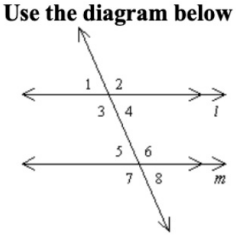
H. Geometry – Bellwork #37 **Date:** _____

Complete the statements below:

1. If a transversal intersects two parallel lines, then corresponding angles are $\cong$.
2. If a transversal intersects two parallel lines, then same-side interior angles are suppl..
3. If a transversal intersects two parallel lines, then alternate interior angles are $\cong$.

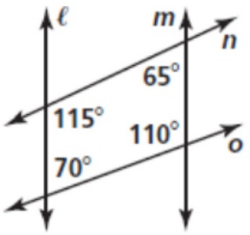
Use the diagram below to answer questions 4 – 11. Justify your answers.



4. If $m\angle 1 = 65°$, find $m\angle 5$. 65°
5. If $m\angle 2 = 110°$, find $m\angle 7$. 110°
6. If $m\angle 4 = 95°$, find $m\angle 6$. 85°
7. If $m\angle 7 = 115°$, find $m\angle 6$. 115°
8. If $m\angle 1 = 70°$, find $m\angle 7$. 110°
9. If $m\angle 6 = 123°$, find $m\angle 3$. 123°
10. If $m\angle 8 = 73°$, find $m\angle 4$. 73°
11. If $m\angle 3 = 112°$, find $m\angle 5$. 68°

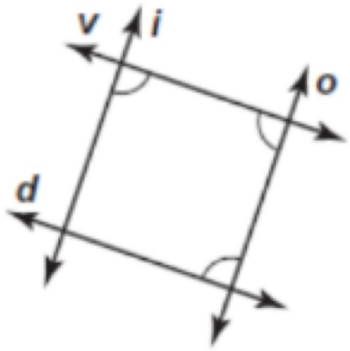
Which lines or segments are parallel? Justify your answer with a theorem or postulate.

12.



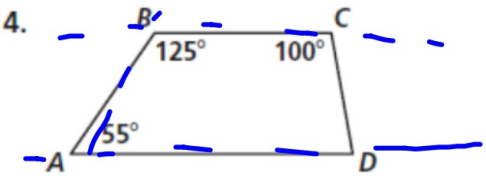
ℓ ∥ m b.c. conv. of SSI ∠'s thm.

13.



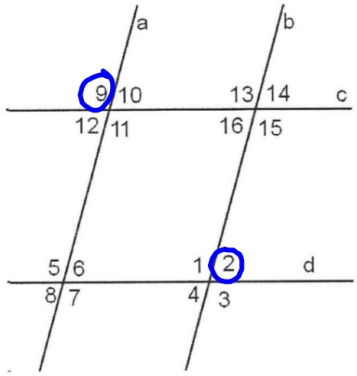
cant be determined

14.



BC ∥ AD
conv.
SS Int Thm.

Use the figure below where $a \| b$ and $c \| d$



State the name given to each pair of angles, if any, and their relationship.

1. 10 and 15 — No name
2. 3 and 7 — Corresp. ≅
3. 12 and 15 — SSE — Suppl.
4. 2 and 4 — Vert. ≅
5. 11 and 5 — Alt Int ≅
6. 4 and 10 — No Name
7. 1 and 6 — SSI — Suppl.
8. 13 and 3 — Alt ext. ≅

Use the same figure above to write a proof.

9. Given: $a \| b$ and $c \| d$
   Prove: $\angle 14 \cong \angle 8$

Statements	Reasons
1. a∥b c∥d	Given
2. ∠14 ≅ ∠4	2. Alt ext.
3. ∠4 ≅ ∠8	3. corresp
4. ∠14 ≅ ∠8	4. subst.

10. Given: $a \| b$ and $c \| d$
    Prove: $\angle 2$ & $\angle 9$ are supplementary

Statements	Reasons
1. a∥b c∥d	1. Given
2. ∠2 & ∠15 are suppl.	2. SSI ∠'s
3. ∠15 ≅ ∠9	3. Alt ext
4. ∠2 & ∠9 are suppl.	4. subst.