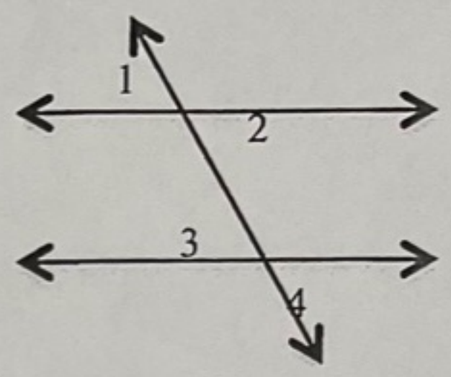
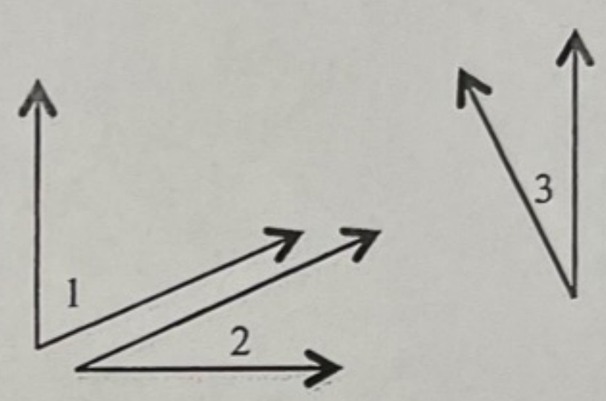
17. Given: $\angle 1 \cong \angle 3$
Prove: $\angle 2 \cong \angle 4$



Statement	Reason
1. $\angle 1 \cong \angle 3$	1. Given
2. $\angle 1 \cong \angle 2$, $\angle 3 \cong \angle 4$	2. Vertical angles $\cong$
3. $\angle 2 \cong \angle 3$	3. _____
4. $\angle 2 \cong \angle 4$	4. _____

19. Given: $\angle 1$ and $\angle 2$ are complementary
$\angle 1$ and $\angle 3$ are complementary

Prove: $\angle 2 \cong \angle 3$

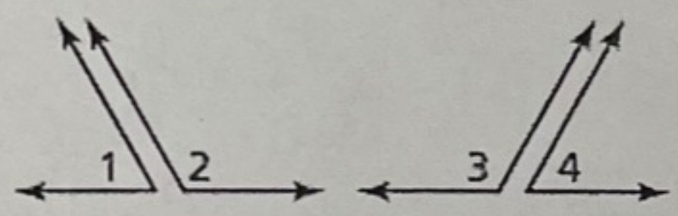


Statement	Reason
1. $\angle 1$ and $\angle 2$ are complementary and $\angle 1$ and $\angle 3$ are complementary	1. _____
2. $m\angle 1 + m\angle 2 = 90$ and _____ $= 90$	2. _____
3. $m\angle 1 + m\angle 2 = m\angle 1 + m\angle 3$	3. _____
4. $m\angle 2 + m\angle 3$	4. _____
5. $\angle 2 \cong \angle 3$	5. _____

20.

Given $\angle 1$ and $\angle 2$ are supplementary.
$\angle 3$ and $\angle 4$ are supplementary.
$\angle 1 \cong \angle 4$

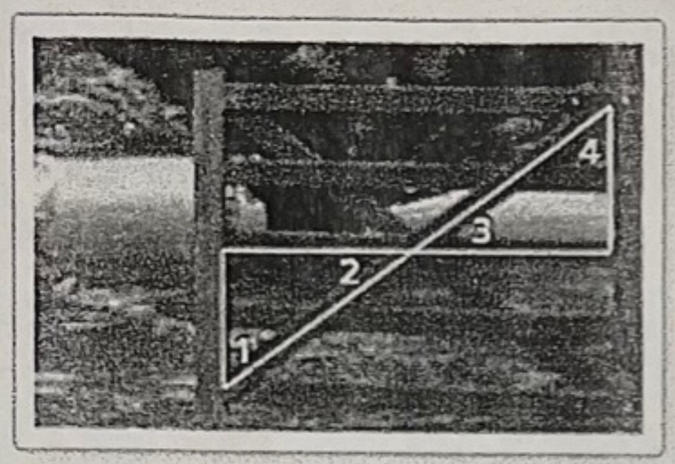
Prove $\angle 2 \cong \angle 3$



Statement	Reason
1. $\angle 1$ and $\angle 2$ are supplementary $\angle 3$ and $\angle 4$ are supplementary $\angle 1 \cong \angle 4$ 1.	1. Given
2. $m\angle 1 + m\angle 2 = 180°$, $m\angle 3 + m\angle 4 = 180°$	2. _____
3. _____ $= m\angle 3 + m\angle 4$	3. Transitive Property of Equality
4. $m\angle 1 = m\angle 4$	4. Definition of congruent angles
5. $m\angle 1 + m\angle 2 =$ _____	5. Substitution Property of Equality
6. $m\angle 2 = m\angle 3$	6. _____
7. _____	7. _____

22. Given $\angle 1$ and $\angle 3$ are complementary.
$\angle 2$ and $\angle 4$ are complementary.

Prove $\angle 1 \cong \angle 4$



Statement	Reason
1. $\angle 1$ and $\angle 3$ are complementary $\angle 2$ and $\angle 4$ are complementary	1. Given
2. _____	
_____ .	2. Definition of complementary angles
3. _____	3. Transitive property
4. $\angle 2 \cong \angle 3$	4. _____
5. $m\angle 2 \cong m\angle 3$	5. _____
6. $m\angle 1 + m\angle 2 = m\angle 2 + m\angle 4$	6. _____
7. $m\angle 1 = m\angle 4$	7. _____
8. $\angle 1 \cong \angle 4$	8. _____

26. THOUGHT PROVOKING Draw three lines all intersecting at the same point. Explain how you can give two of the angle measures so that you can find the remaining four angle measures.

29. MATHEMATICAL CONNECTIONS Find the measure of each angle in the diagram.