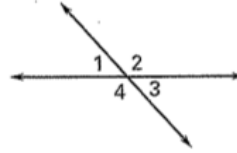


Use the diagram to decide whether the statement is *true* or *false*.

1. If $m\angle 1 = 47^\circ$, then $m\angle 2 = 43^\circ$.
2. If $m\angle 1 = 47^\circ$, then $m\angle 3 = 47^\circ$.
3. $m\angle 1 + m\angle 3 = m\angle 2 + m\angle 4$.
4. $m\angle 1 + m\angle 4 = m\angle 2 + m\angle 3$.



Make a sketch of the given information. Label all angles which can be determined.

- | | |
|--|---|
| <p>5. Adjacent complementary angles where one angle measures 42°</p> | <p>6. Nonadjacent supplementary angles where one angle measures 42°</p> |
| <p>7. Congruent linear pairs</p> | <p>8. Vertical angles which measure 42°</p> |

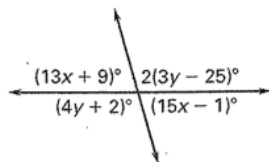
Make a sketch of the given information. Label all angles which can be determined.

9. $\angle ABC$ and $\angle CBD$ are adjacent complementary angles. $\angle CBD$ and $\angle DBE$ are adjacent complementary angles.

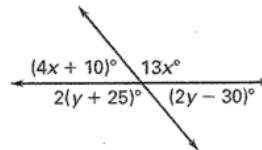
10. $\angle 1$ and $\angle 2$ are complementary.
 $\angle 3$ and $\angle 4$ are complementary.
 $\angle 1$ and $\angle 3$ are vertical angles.

Find the value of the variables and the measure of each angle in the diagram.

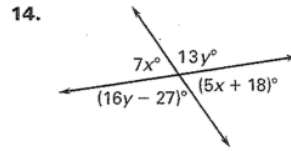
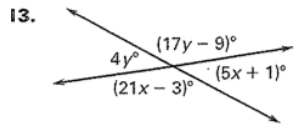
11.



12.



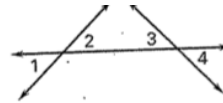
Find the value of the variables and the measure of each angle in the diagram.



Give a reason for each step of the proof.

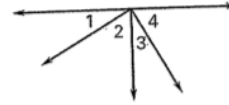
15. GIVEN: $\angle 2 \cong \angle 3$

PROVE: $\angle 1 \cong \angle 4$



Statements	Reasons
1. $\angle 2 \cong \angle 3$	1. ?
2. $\angle 3 \cong \angle 4$	2. ?
3. $\angle 2 \cong \angle 4$	3. ?
4. $\angle 1 \cong \angle 2$	4. ?
5. $\angle 1 \cong \angle 4$	5. ?

16. GIVEN: $\angle 1$ and $\angle 2$ are complementary.
 $\angle 1 \cong \angle 3, \angle 2 \cong \angle 4$



PROVE: $\angle 3$ and $\angle 4$ are complementary.

Statements	Reasons
1. $\angle 1$ and $\angle 2$ are complementary.	1. ?
2. $m\angle 1 + m\angle 2 = 90^\circ$	2. ?
3. $\angle 1 \cong \angle 3, \angle 2 \cong \angle 4$	3. ?
4. $m\angle 1 = m\angle 3, m\angle 2 = m\angle 4$	4. ?
5. $m\angle 3 + m\angle 2 = 90^\circ$	5. ?
6. $m\angle 3 + m\angle 4 = 90^\circ$	6. ?
7. $\angle 3$ and $\angle 4$ are complementary.	7. ?

In the diagram, $\angle 1$ is a right angle and $m\angle 6 = 36^\circ$. Complete the statement with $<$, $>$, or $=$.

17. $m\angle 6 + m\angle 7$? $m\angle 4 + m\angle 5$
 18. $m\angle 6 + m\angle 8$? $m\angle 2 + m\angle 3$
 19. $m\angle 9$? $3(m\angle 6)$
 20. $m\angle 2 + m\angle 3$? $m\angle 1$

