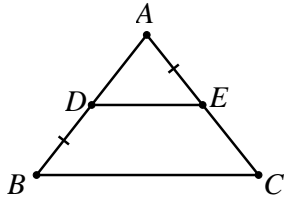


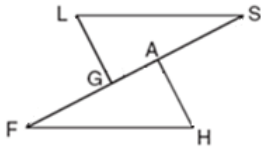
Complete a Two-column proof.

1. Given: \overline{DE} bisects \overline{AC} at E
 \overline{DE} bisects \overline{AB} at D
 $\overline{BD} \cong \overline{AE}$
Prove: $\overline{AD} \cong \overline{CE}$



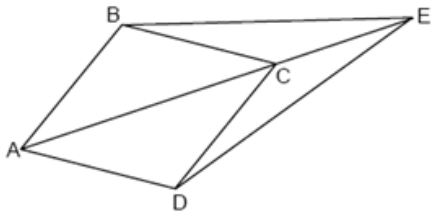
2. Given: $\overline{FS} \perp \overline{LG}$
 $\overline{FS} \perp \overline{HA}$

Prove: $\angle LGA \cong \angle HAG$



3. Given: $\angle BAC$ supp. $\angle BCE$

Prove: $\angle BCA \cong \angle BAC$



Write the definition of each as a bi-conditional (...if and only if...)

4. Segment Bisector: _____

5. Complementary Angles: _____

Negate the statement:

6. \overline{RE} does not bisect $\angle PRS$.

7. \overline{RT} bisects \overline{GH}

State whether the statement is True or False.

8. An obtuse angle is 90° and a straight angle is 180° .

9. Vertical angles are not congruent and complementary angles are always congruent.

After each statement write *Converse*, *Inverse*, *Contra-positive*, or *None* based on the given conditional.
Circle the statement that is logically equivalent to the given conditional.

"If two angles are right, then they are congruent."

10. If two angles are congruent, then they are both right. _____

11. If two angles are not congruent, then they are not both right. _____

12. If two angles are right, then they are not congruent. _____

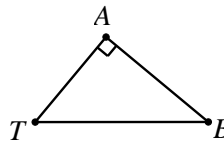
13. If two angles are not both right, then they are not congruent. _____

Write the definition or theorem and then use it to make a true conclusion.

14. Perpendicular Lines: _____

Given: $\angle TAB$ is a right angle.

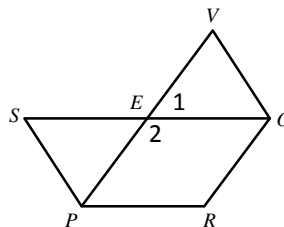
Conclusion: _____



15. Supplementary Angle Theorem: _____

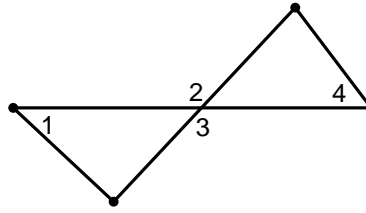
Given: \overline{PV} intersects \overline{SO} at E

Conclusion: _____



For the given facts, write a true conclusion and state the reason that justifies why the conclusion is true.

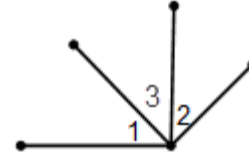
16. Given: $\angle 3 \cong \angle 2$.
 $\angle 2$ is supplementary to $\angle 1$
 $\angle 3$ is supplementary to $\angle 4$



Conclusion: _____

Reason: _____

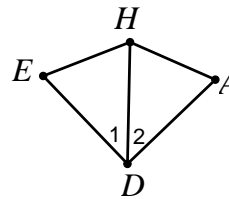
17. Given: $\angle 1 \cong \angle 3$ and $\angle 2 \cong \angle 3$



Conclusion: _____

Reason: _____

18. Given: \overline{HD} bisects $\angle EDA$



Conclusion: _____

Reason: _____

n y n n y r t n e u r g n o c l e c r c
t o r o n r o g f f o v x e b a t q a o
g n i a i a s t u o c z q v e c a g l n
u y e t t t i j c s p u n r m i g o u t
f h y c i n i g v e a h h k h t e w c r
h r c y a d e d z l s l z o r r n e i a
u q d v w j d m d m q i l t r e l d d p
r c a g h y d a e a s k b z g v q i n o
i n v e r s e a t l e m l t p i f e e s
m l r r x t f w z n p l u v n h i i p i
r c o n v e r s e s e p g r o e l b r t
l t u r u f a b m u r m u n i h m s e i
y c u f l r v t f p s p g s a g k g p v
r o t c e s i b e l g n a e g q h o e e
s t r a i g h t a n g l e p s m n t c s
o x i r b f m i d p o i n t m j t b n w
s b c o x d d v b x j w t l a m s l p e
k i j q u x q c o m p l e m e n t a r y
j p z j m k l l y k r n x d s s k q l e
f q h f y j o f n d d j t m z g h s h t

1. Angles that share a vertex and a side. _____
2. Adding 2 angles to form a larger angle. _____
3. Divides an angle into 2 congruent angles. _____
4. Adjacent angles that form a right angle (they add to 90°). _____
5. Same size and shape. _____
6. Same measure (numerical value). _____
7. Negate both parts of a conditional statement. _____
8. Divides a segment into 2 congruent segments. _____
9. Change the truth value of a statement. _____
10. Lines that meet at a right angle. _____
11. An angle that measures 90° . _____
12. Adding two segments to get a larger segment. _____
13. Goes through the midpoint of a segment. _____
14. An angle that measures 180° . _____
15. Adjacent angles formed by 2 intersecting lines (they add to 180°). _____
16. Non-adjacent angles formed by 2 intersecting lines. _____
17. Change the order of the parts of a conditional statement. _____
18. Switch and negate the parts of a conditional statement. _____