

Key This Review is done with 2.6 proof WS

2.1

In Exercises 1 and 2, identify the hypothesis and the conclusion.

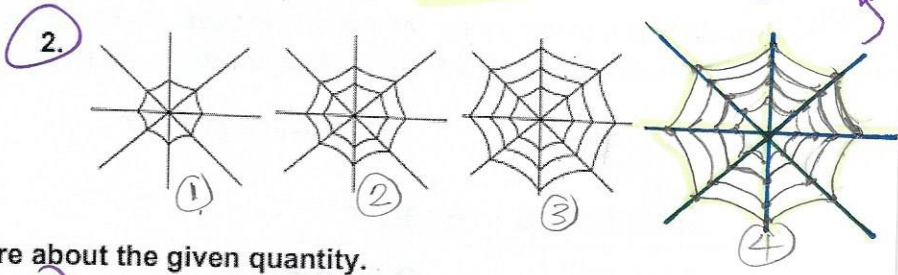
- If you like to eat, then you are a good cook. (hypothesis: you like to eat; conclusion: you are a good cook)
- If an animal is a bear, then it is a mammal. (hypothesis: an animal is a bear; conclusion: it is a mammal)
- Let p be "a tree is an oak tree" and let q be "it is a deciduous tree." Write each statement in words. Then decide whether it is true or false.

- the conditional statement $p \rightarrow q$ **If a tree is an oak tree then it is a deciduous tree.**
- the converse $q \rightarrow p$ **If a tree is a deciduous tree then it is an oak tree.**
- the inverse $\sim p \rightarrow \sim q$ **If a tree is NOT an oak tree then it is NOT a deciduous tree.**
- the contrapositive $\sim q \rightarrow \sim p$ **If a tree is NOT a deciduous tree then it is NOT an oak tree.**

2.2

In Exercises 1 and 2, describe the pattern. Then write or draw the next two numbers, letters, or figures.

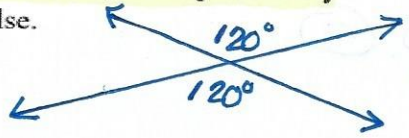
- A, 26, B, 25, C, 24, ... **D, 23 E, 22**
 - next letter of alpha
 - Subtr. -1 - from prev. #.



In Exercises 3 and 4, make and test a conjecture about the given quantity.

- the sum of two absolute values
 $|5| + |-5| \Rightarrow 5 + 5 = 10$
- Vertical angles are always complementary. Find a counterexample to show that the conjecture is false.
- the product of a number and its square
 ex $\rightarrow (2)(2) = 2^2 ; (4)(4) = 4^2$

★ Come up with your own ★

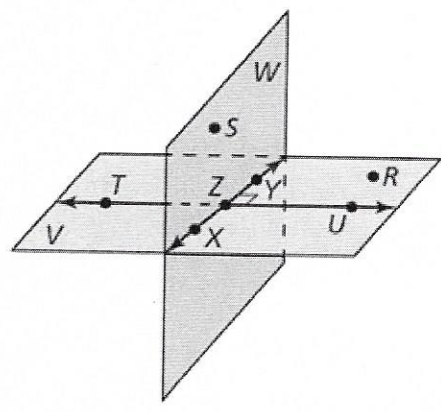


★ $120^\circ + 120^\circ \neq 90^\circ$
 $240^\circ \neq 90^\circ$ Q.E.D.

2.3

In Exercises 9-12, use the diagram to determine whether you can assume the statement.

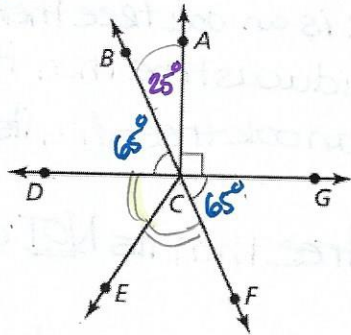
- Planes W and V intersect at \overline{TU} . **false, they intersect @ \overline{XY} .**
- Points $T, U,$ and R are coplanar. **true, they lie on plane V .**
- $\angle TZX$ and $\angle UZY$ are vertical angles. **True.**
- \overline{TU} lies in plane W . **False, - it intersects plane W @ pt. Z . - it lies in plane V .**



2.4

In Exercises 7 and 8, use the property to complete the statement.

- 7. Multiplication Property of Equality: If $m\angle J = 30^\circ$, then $2m\angle J = 60^\circ$.
- 8. Transitive Property: If $3x + y = 7$ and $7 = 5x - 2y$, then $3x + y = 5x - 2y$
- 10. In the diagram, $m\angle ACB = 25^\circ$ and \overline{CE} bisects $\angle DCF$. Explain how to find $m\angle DCE = 57.5$



1- Since $\angle ACG$ is a right \angle , so is $\angle ACD$ LP/ sup. \angle 's
 2- That makes $\angle ACB \neq \angle BCD$ Complementary \angle 's Def. Comp. \angle 's
 $\therefore m\angle BCD = 65^\circ$
 3- $\angle BCD \cong \angle GCF$, VA Thm.
 4- $m\angle GCF + m\angle DCF = 180^\circ$; Straight \angle
 5- $m\angle DCF = \frac{115}{2} \Rightarrow 57.5$
 2
 \angle bisector Def.
 $\therefore m\angle DCE = 57.5$

2.5

Complete the proof using the correct reason. (1) Congruent segments, (2) Given, (3) Congruent angles, (4) Symmetric, (5) Reflexive

Given: $\overline{AB} \cong \overline{CD}$

Prove: $\overline{CD} \cong \overline{AB}$



STATEMENTS	REASONS
$\overline{AB} \cong \overline{CD}$	7. Given
$AB = CD$	8. congruent seg. def.
$CD = AB$	9. Reflexive prop. \cong
$\overline{CD} \cong \overline{AB}$	Definition of congruent segments