

CHAPTER 2 STUDY GUIDE

Name: _____

Find the next item in each pattern.



2) 405, 135, 45, 15, ...

3) Complete the conjecture: "The sum of two even numbers is _____."

4) Show that the conjecture "All complementary angles are adjacent" is false by finding a counterexample.

5) Identify the hypothesis and the conclusion of the conditional statement "The show is cancelled if it rains."

6) Write a conditional statement from the sentence "Parallel lines do not intersect."

Determine if the conditional is true. If false, give a counterexample.

7) If two lines intersect, then they form four right angles.

8) If a number is divisible by 10, then it is divisible by 5.

Use the conditional "If you live in the United States, then you live in Kentucky" for items 9 - 11. Write the indicated type of statement and determine its truth value.

9) Converse:

10) Inverse:

11) Contrapositive:

12) Determine if the following conjecture is valid by the Law of Syllogism. If it is invalid, fix the conjecture.

Given: If it is colder than 50°F, then Tom wears a sweater. If Tom wears a sweater, then he is cold.

Conjecture: If Tom is cold, then it is colder than 50°F.

13) Use the Law of Syllogism to draw a conclusion from the given information.

Given: If a figure is a square, then it is a quadrilateral. If a figure is a quadrilateral, then it is a polygon. Figure ABCD is a square.

Conclusion:

14) Write the conditional statement and converse within the biconditional.

“Chad will work on Saturday if and only if he gets paid overtime.”

15) Determine if the biconditional is true. If false, give a counterexample.

“B is the midpoint of \overline{AC} if and only if $AB = BC$ ”

Identify the property that justifies each statement. (Reflexive, Symmetric, Transitive, or Substitution)

16) If $\angle A$ is a right angle and $\angle A \cong \angle B$,
then $\angle B$ is a right angle.

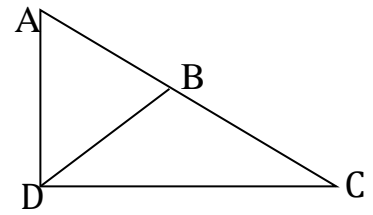
17) $m\angle DEF = m\angle DEF$

18) $\angle X \cong \angle P$, and $\angle P \cong \angle D$. So $\angle X \cong \angle D$.

19) If $\overline{ST} \cong \overline{XY}$, then $\overline{XY} \cong \overline{ST}$.

Drawing Conclusions

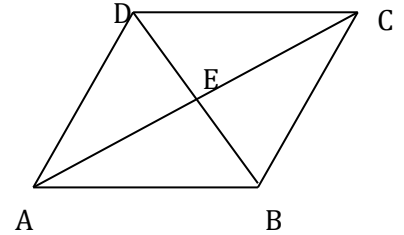
20) Given: \overline{DB} bisects $\angle ADC$



Conclusion: _____

Reason: _____

21) Given: E is the midpoint of \overline{DB}



Conclusion: _____

Reason: _____

Writing Proofs

22) Given: $\angle 2$ is supplementary to $\angle 3$
 $\angle 3$ is supplementary to $\angle 1$

Prove: $\angle 1 \cong \angle 2$

Statements

Reasons

23) Given: $\overline{BA} \cong \overline{AT}$

Prove: A is the midpoint of \overline{BT}

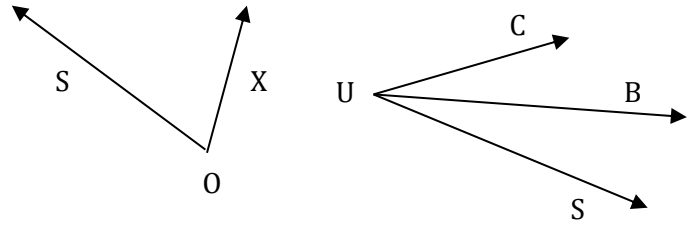
Statements

Reasons

24) Given: \overline{UB} bisects $\angle CUS$

$$\angle CUB \cong \angle SOX$$

Prove: $\angle BUS \cong \angle SOX$



Statements

Reasons

25) Given: $\angle C$ and $\angle K$ form a linear pair

Prove: $\angle C$ and $\angle K$ are supplementary.

Statements

Reasons

26) Given: $\angle C$ and $\angle K$ are right angles.

$$\angle C \cong \angle M$$

Prove: $\angle M$ and $\angle K$ are right angles.

Statements

Reasons

You must also study notes, previous homework assignments, learning targets, and problems from the book!