Name _____ Date _____

2.1 Practice A

In Exercises 1 and 2, copy the conditional statement. Underline the hypothesis and circle the conclusion.

1. If you like the ocean, then you are a good swimmer.

2. If it is raining outside, then it is cold.

In Exercises 3 and 4, rewrite the conditional statement in if-then form.

3. All children must attend school.

4. Congruent angles have equal angle measures.

5. Let p be "an animal is a puppy" and let q be "it is a dog." Write each statement in words. Then decide whether it is true or false.

a. the conditional statement $p \rightarrow q$

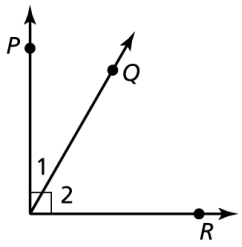
b. the converse $q \rightarrow p$

c. the inverse : $p \rightarrow : q$

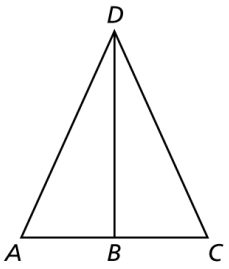
d. the contrapositive : $q \rightarrow : p$

In Exercises 6 and 7, decide whether the statement about the diagram is true. Explain your answer using the definitions you have learned.

6. $\angle 1 + \angle 2 = 90°$



7. $\overline{AD} \cong \overline{DB}$



8. Rewrite the definition of the term as a biconditional statement: Obtuse angles are angles with measures greater than $90°$ and less than $180°$.

9. Rewrite the statements as a single biconditional statement: If two angles are supplementary, then the sum of their angle measures is $180°$. If the sum of two angles is $180°$, then they are supplementary angles.

10. If the negation of a statement is true, does that mean that the original statement is automatically false? Explain your reasoning.

11. Write a conditional statement that is false but has a true inverse.

Name_____ Date _____

2.1 Practice B

In Exercises 1 and 2, copy the conditional statement. Underline the hypothesis and circle the conclusion.

1. If you like to eat, then you are a good cook.

2. If an animal is a bear, then it is a mammal.

3. 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.

a. the conditional statement $p \rightarrow q$

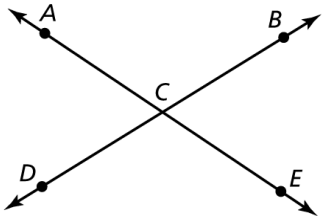
b. the converse $q \rightarrow p$

c. the inverse : $p \rightarrow : q$

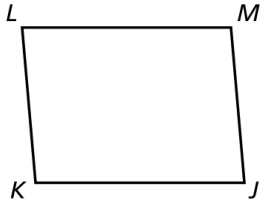
d. the contrapositive : $q \rightarrow : p$

In Exercises 4 and 5, decide whether the statement about the diagram is true. Explain your answer using the definitions you have learned.

4. $\angle ACB$ and $\angle DCE$ are vertical angles.



5. $\overline{KL} \perp \overline{LM}$



6. Rewrite the two statements as a single biconditional statement: A rectangle is a quadrilateral that has all perpendicular sides. If all sides of a quadrilateral are perpendicular, then it is a rectangle.

7. Your friend claims that only true conditional statements have a true contrapositive. Is your friend correct? Explain your reasoning.

8. Rewrite the conditional statement in if-then form: $3x + 2 = 23$, because $x = 7$.

9. Write a series of if-then statements that allow you to find the measure of each angle, given that $\angle ILH = 38°$. Use the definitions of supplementary and complementary angles that you have learned so far.