Name_____ Class _____ Date_____

# 2-2 Practice

*Form K*

## Conditional Statements

**Identify the hypothesis and conclusion of each conditional.**

**1.** If the shoe fits, then you can wear it.

To start, identify the *if* and *then* portions of the statement.

If the shoe fits, then you can wear it.

**2.** If you are a lawyer, then you passed the bar exam.

**3.** If it is a fish, then it lives in water.

**Write each sentence as a conditional.**

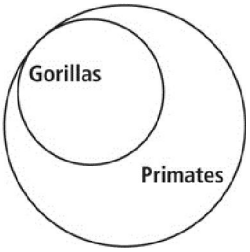
**4.** Robert Oppenheimer spoke eight languages.
To start, identify the *if* part of the statement and rewrite it as a hypothesis.

**5.** Purple and yellow are complementary colors.

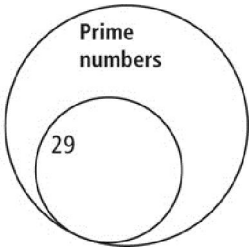
**6.** A decibel is a measurement of the intensity of a sound.

**Write a conditional statement that each Venn diagram illustrates.**

**7.**




**8.**




**Determine if the conditional is *true* or *false*. If it is false, find a counterexample.**

**9.** If an animal has wings, then it is a bird.

**10.** If it is after sunset, you can see the stars.

# 2-2 Practice (continued)

*Form K*

## Conditional Statements

**Write the converse, inverse, and contrapositive of the given conditional statement. Determine the truth value of all four statements. If a statement is false, give a counterexample.**

**11.** Three points not on the same line are noncollinear.

**12.** Obtuse angles have measures greater than 90.

**13.** If you do not live in Tampa, then you do not live in Florida.

**14.** If $n$ is an even number, then $n$ is divisible by 2.

**Write the converse of each statement. If the converse is true, write *true.* If it is not true, provide a counterexample.**

**15.** If it is snowing, then it is cloudy.

**16.** All rectangles are quadrilaterals.

**17.** All students like chocolate.

**18.** All right triangles have two or more congruent angles.

Name _____ Class _____ Date _____

# 2-2 Practice

*Form K*

## Conditional Statements

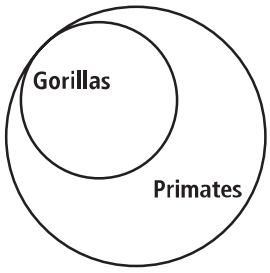
**Identify the hypothesis and conclusion of each conditional.**

1. If the shoe fits, then you can wear it.
   To start, identify the *if* and *then* portions of the statement.
   If the shoe fits, then you can wear it.
   **Hypothesis (*p*): The shoe fits; Conclusion (*q*): You can wear it.**
2. If you are a lawyer, then you passed the bar exam.
   **Hypothesis (*p*): You are a lawyer; Conclusion (*q*): You passed the bar exam.**
3. If it is a fish, then it lives in water.
   **Hypothesis (*p*): It is a fish; Conclusion (*q*): It lives in water.**

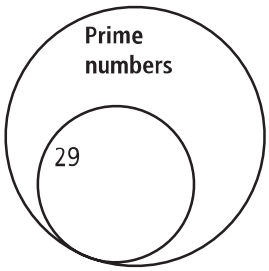
**Write each sentence as a conditional.**

4. Robert Oppenheimer spoke eight languages.
   To start, identify the *if* part of the statement and rewrite it as a hypothesis.
   **If a person was Robert Oppenheimer, then he could speak eight languages.**
5. Purple and yellow are complementary colors.
   **If two colors are purple and yellow, then they are complementary.**
6. A decibel is a measurement of the intensity of a sound.
   **If it is measured in decibels, then it is the intensity of a sound.**

**Write a conditional statement that each Venn diagram illustrates.**

7. 

   **If the animal is a gorilla, then it is a primate.**

8. 

   **If the number is 29, then it is a prime number.**

**Determine if the conditional is *true* or *false*. If it is false, find a counterexample.**

9. If an animal has wings, then it is a bird. **False; a bat has wings, but it is not a bird.**

10. If it is after sunset, you can see the stars. **False; you cannot see stars on a cloudy night.**

Name _____ Class _____ Date _____

# 2-2 Practice (continued) *Form K*

## Conditional Statements

**Write the converse, inverse, and contrapositive of the given conditional statement. Determine the truth value of all four statements. If a statement is false, give a counterexample.**

**11.** Three points not on the same line are noncollinear. True; Converse: If three points are noncollinear, then they are not on the same line; true. Inverse: If three points are on the same line, then they are collinear; true. Contrapositive: If three points are collinear, then they are on the same line; true.

**12.** Obtuse angles have measures greater than 90. True; Converse: If an ∠ has a measure greater than 90, then it is obtuse; true. Inverse: If an ∠ is not obtuse, then it does not have a measure greater than 90; true. Contrapositive: If an ∠ does not have a measure greater than 90, then it is not obtuse; true.

**13.** If you do not live in Tampa, then you do not live in Florida. False; You could live in Orlando. Converse: If you do not live in Florida, then you do not live in Tampa; true. Inverse: If you live in Tampa, then you live in Florida; true. Contrapositive: If you live in Florida, then you live in Tampa; false. You could live in Orlando.

**14.** If $n$ is an even number, then $n$ is divisible by 2. True; Converse: If $n$ is divisible by 2, then $n$ is an even number; true. Inverse: If $n$ is not an even number, then $n$ is not divisible by 2; true. Contrapositive: If $n$ is not divisible by 2, then $n$ is not an even number; true.

**Write the converse of each statement. If the converse is true, write *true*. If it is not true, provide a counterexample.**

**15.** If it is snowing, then it is cloudy.
If it is cloudy, then it is snowing; false; it could be overcast without precipitation of any sort falling.

**16.** All rectangles are quadrilaterals.
If a figure is a quadrilateral, then it is a rectangle; false; a quadrilateral does not necessarily have 90° angles or parallel opposite sides.

**17.** All students like chocolate.
If a person likes chocolate, then he or she is a student; false; a chocolate lover could be a businessperson or a pre-school-aged child.

**18.** All right triangles have two or more congruent angles.
If a triangle has two or more congruent angles, then it is a right triangle; false; two equilateral triangles can be congruent, but neither is a right triangle.