

Practice 2-1 **Conditional Statements**

Show that each conditional is false by finding a counterexample.

2. If the car is full of gas, then the engine will start.
3. If a number is divisible by 3, then it is odd.

Write the converse of each conditional.

4. If you drink milk, then you will be strong.
5. If a rectangle has four sides the same length, then it is a square.

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

8. If $|x| > 0$, then $x > 0$.
9. If m^2 is positive, then m is positive.
10. If $y = 3$, then $2y - 1 = 5$.
12. If two lines have equal slopes, then the lines are parallel.

Answer the following questions about the given quote.

“If you like to shop, then visit the Pigeon Forge outlets in Tennessee.”

15. Identify the hypothesis and the conclusion.
17. Write the converse of the conditional.

Practice 5-4 **Inverses, Contrapositives, and Indirect Reasoning**

Write the negation of each statement.

3. The angle measure is 65.
4. Tina has her driver's license.
5. The figure has eight sides.
6. The restaurant is not open on Sunday.
7. $\triangle ABC$ is not congruent to $\triangle XYZ$.

Write (a) the inverse and (b) the contrapositive of each statement. Give the truth value of each.

9. If two triangles are congruent, then their corresponding angles are congruent.
10. If you live in Toronto, then you live in Canada.

Use the Law of Detachment to draw a conclusion.

1. If the measures of two angles have a sum of 90° , then the angles are complementary.

$$m\angle A + m\angle B = 90$$

2. If the football team wins on Friday night, then practice is canceled for Monday.
The football team won by 7 points on Friday night.

If possible, use the Law of Detachment to draw a conclusion. If not possible, write *not possible*.

7. If Robbie wants to save money to buy a car, he must get a part-time job.

Robbie started a new job yesterday at a grocery store.

8. If a person lives in Omaha, then he or she lives in Nebraska.

Tamika lives in Omaha.

9. If two figures are congruent, their areas are equal.

The area of $ABCD$ equals the area of $PQRS$.

Use the Law of Syllogism to draw a conclusion.

4. If you liked the movie, then you saw a good movie.

If you saw a good movie, then you enjoyed yourself.

5. If two lines are not parallel, then they intersect.

If two lines intersect, then they intersect at a point.

6. If you vacation at the beach, then you must like the ocean.

If you like the ocean, then you will like Florida.

Use the Law of Detachment and the Law of Syllogism to draw conclusions from the following statements.

10. If it is raining, the temperature is greater than 32°F .

If the temperature is greater than 32°F , then it is not freezing outside.

11. If you live in Providence, then you live in Rhode Island.

If you live in Rhode Island, then you live in the smallest state in the United States.

12. If it does not rain, the track team will have practice.

The track team had practice on Thursday.