# eXPLORE

Consider the following two statements:

* If Briony is texting, then she is using a cellphone.
* If Briony is using a cellphone, then she is texting.

How do these statements relate to each other? Are they both true?

# Example #1

Consider the following conditional statement:

* If it is Saturday, then I will go to the movies.”

Verify when this conditional statement is true or false. Confirm your results with a Venn diagram.

# eXAMPLE 2

Determine whether the converse of the conditional statement in Example 1 is true or false.

# PRACTICE1

Consider the conditional statement “If I am reading, then I am studying.”

1. Write the hypothesis and the conclusion.
2. Is the conditional statement true? If it is false, provide a counterexample.
3. Write the converse. Is the converse true? If it is false, provide a counterexample if possible.

# PRACTICE 2

Consider the following conditional statement: “If an integer ends in 0, then it is divisible by 5.”

1. Write the hypothesis and the conclusion.
2. Is the conditional statement true? If it is false, provide a counterexample.
3. Write the converse. Is the converse true? If it is false, provide a counterexample.

# PRACTICE 3

1. Consider the following conditional statement in relation to the Venn diagram: “If an integer is divisible by 9, then it is divisible by 3.” Is this statement true or false?



1. Write the converse and say whether it is true or false. If it is false, provide a counterexample.

# PRACTICE 4

A square has four equal sides.

1. Write this statement in “if p then q” form.
2. Write the converse of your conditional statement in part a)
3. Is each statement true or false?
	1. Original statement: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	2. Converse statement: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. Is the statement biconditional? Explain.