

## 2.2 Conditional Statements

### Homework Day 1

HW: p. 84-85 #1-6, 10-12

**Vocabulary** Apply the vocabulary from this lesson to answer each question.

1. The ? of a *conditional statement* is formed by exchanging the hypothesis and conclusion. (*converse, inverse, or contrapositive*)
2. A *conditional* and its *contrapositive* are ? because they have the same truth value. (*logically equivalent or converses*)

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

#3 If a person is at least 16 years old, then the person can drive a car.

#4 A figure is a parallelogram if it is a rectangle.

#5 The statement  $a - b < a$  implies that b is a positive number.

Write a conditional statement from each of the following.

#6 Eighteen-year-olds are eligible to vote.

If a person is eighteen years old, then they are eligible to vote.

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

#10 If  $x > y$ , then  $|x| > |y|$ .

False:  $-2 > -3$ , but  $|-2| > |-3|$

#11 If the season is spring, then the month is March.

False: It could be April or May ☺

#12 Write the converse, inverse, and contrapositive of the following statement. Find the truth value of each.

“If Brielle drives at exactly 30 mi/h, then she travels 10 mi in 20 mins.” **TRUE**

**Converse:** If Brielle travels 10 mi in 20 mins, then she drive at exactly 30 mi/hr. **FALSE**

**Inverse:** If Brielle does not drive at exactly 30 mi/h, then she does not travel 10 mi in 20 mins. **FALSE**

**CONTRAPOSITIVE:** If Brielle does not travel 10 mi in 20 mins, then she did not drive at exactly 30 mi/hr. **TRUE**