

Name of Participant: _____

B. Identify the **hypothesis** and the **conclusion** in each conditional statement below.

1. If a coffee is sweet, then it has sugar in it.
2. If a person is hungry, then he needs to eat.
3. If a baby is born on the seventh month of pregnancy, then he/she is premature.
4. If this school year you are in Grade 8, then you will be in Grade 9 next school year.
5. If an accused is found not guilty, then he/she should be acquitted.

A coffee is sweet	The coffee has sugar in it
A person is hungry	The person needs to eat.
The baby is born on the seventh month of pregnancy	The baby is premature
This school year you are in Grade 8	You will be in Grade 9 next school year.
An accused is found not guilty.	The accused should be acquitted.

C. Complete the conditional statement below with a logical conclusion.

1. If $3x + 6y = 12$, then _____.
2. If a set of points are equidistant from a fixed point on a plane, then _____.
3. If two sides of a triangle are congruent, then _____.
4. If a quadrilateral has four equal sides, then _____.
5. If $x = 9$, then _____.

 $x + 2y = 4$ the points form a circle the triangle is isosceles it is a rhombus $2x = 18$

D. Transform each statement into its equivalent "If-then" form.

1. The price of the necessary commodities also rises if the price of gas rises.

2. The first month of the year is January.

3. Two distinct planes intersect at a line.

4. A right angle measures 90° .

5. All sides of an equilateral triangle are equal.

If the price of gas rises, then the price of the necessary commodities also rises.

If this month is the first month, then this month is January.

If two distinct planes intersect, then they intersect at a line.

If an angle is a right angle, then it measures 90° .

If the sides of triangle are equal, then the triangle is equilateral triangle.

F. Give the converse, inverse, and contrapositive of each conditional statement below.

1. If today is Wednesday, then yesterday was Tuesday.
2. If x and y are both odd numbers, then $x+y$ is an even number.
3. If a polygon has four sides, then it is not a triangle.
4. If two angles are adjacent, then they have a common side.
5. If $2x + 2y = 24$, then $3x + 3y = 36$.

1. If today is Wednesday, then yesterday was Tuesday.

Converse	
Inverse	
Contrapositive	

If yesterday was Tuesday, then today is Wednesday.
 If today is not Wednesday, then yesterday was not Tuesday.
 If yesterday was not Tuesday, then today is not Wednesday.

2. If x and y are both odd numbers, then $x + y$ is an even number.

Converse	If $x + y$ is an even number, then x and y are both odd numbers.
Inverse	If x and y are not both odd numbers, then $x + y$ is not an even number.
Contrapositive	If $x + y$ is not an even number, then x and y are not both odd numbers,

If $x + y$ is an even number, then x and y are both odd numbers.
 If x and y are not both odd numbers, then $x + y$ is not an even number.
 If $x + y$ is not an even number, then x and y are not both odd numbers,

3. If a polygon has four sides, then it is not a triangle.

Converse	
Inverse	
Contrapositive	

If a polygon is not a triangle, then it has four sides
 If a polygon does not have four sides, then it is a triangle.
 If a polygon is a triangle, then it does not have four sides.

4. If two angles are adjacent, then they have a common side.

Converse	
Inverse	
Contrapositive	

If two angles have a common side, then they are adjacent.
 If two angles are not adjacent, then they do not have a common side.
 If two angles do not have a common side, then they are not adjacent.

5. If $2x + 2y = 24$, then $3x + 3y = 36$.

Converse	
Inverse	
Contrapositive	

If $3x + 3y = 36$, then $2x + 2y = 24$.
 If $2x + 2y \neq 24$, then $3x + 3y \neq 36$.
 If $3x + 3y \neq 36$, then $2x + 2y \neq 24$.

G. What are the different properties of equality and congruence? Identify the property/ies illustrated in each of the following items.

$$1. \frac{x}{2} = 5 \\ \therefore x = 10$$

$$2. 2x + 7 = 4 - 3x \\ 5x = -3 \\ \therefore x = -\frac{3}{5}$$

$$3. P = 2l + 2w \\ \therefore P = 2(l + w)$$

$$4. m\angle A + m\angle B = 180 - m\angle C \\ m\angle A + m\angle B = 90 \\ \therefore 180 - m\angle C = 90$$

$$5. \angle X \cong \angle Y, \angle X \cong \angle Z \\ \therefore \angle Y \cong \angle Z$$

$$6. \triangle ABC \cong \triangle XYZ \\ \therefore \triangle XYZ \cong \triangle ABC$$

$$7. \overline{AB} \cong \overline{AB}$$

$$8. 2AB + 3DE = 15 \\ AB = DE \\ \therefore 2DE + 3DE = 15$$

$$9. 2m\angle MOP = 180 \\ \therefore m\angle MOP = 90$$

$$10. FH = AC \\ GH = BC \\ \therefore FH - GH = AC - BC$$

$$11. 90 = m\angle PQR \\ \therefore m\angle PQR = 90$$

$$12. m\angle PQR = m\angle X + m\angle Y \\ m\angle PQR + 2(m\angle X + m\angle Y) = 270 \\ \therefore (m\angle X + m\angle Y) + 2(m\angle X + m\angle Y) = 270$$