

Write the following statements in "if, then" form. Then, write the biconditional of each one.

1. All roses are red.

If rose, then red.

A flower is a rose \iff it is red.

2. All circles are 360 $^\circ$.

If it is a \odot , then it is 360 $^\circ$.

It is a \odot \iff it is 360 $^\circ$.

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TOC pg 49 Converse, Inverse, Contrapositive

Converse	Inverse
Contrapositive	Equivalent statements

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Converse

$$q \rightarrow p$$

* swaps the hypothesis and the conclusion.

"If an angle is less than 90, then it is acute."

"If an angle ^{is} acute, then an angle is less than 90." if

Inverse

$$\sim p \rightarrow \sim q$$

* negates the hypothesis and conclusion.

"If an angle is less than 90, then it is acute."

"If an angle is NOT less than 90, then it is NOT acute."

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Contrapositive

$$\sim q \rightarrow \sim p$$

* switches the hypothesis and conclusion AND negates them both.

"If an angle ^p is less than 90, then it is acute."

"If an angle ^q is NOT acute, then it is NOT less than 90."

Equivalent statements

*The original conditional statement is equivalent to the

contrapositive

*The converse of the conditional statement is equivalent to the

inverse

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Converse, Inverse, Contrapositive Practice

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Write the converse, inverse, and contrapositive of each conditional statement.

10. If it is Saturday, then school is closed.

11. If two angles are complementary, then they total 90° .

12. If a line bisects a segment, then the segment is divided into two congruent parts.

13. If it rains, then I will not go.

14. If two angles form a linear pair, then they are supplementary.

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Write the converse, inverse, and contrapositive of each statement:

Ex 1 (pg 123): If a shape has 5 sides, then it is not a quadrilateral.

Ex 2 (pg 123): If two lines intersect, then they create congruent vertical angles.

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In 21 - 24, write the contrapositive of the statement in words.

21) If you care enough to send the best, then you send Trademark cards

22) If you use Trickle deodorant, then you won't have body odor.

23) If you brush with Brite, then your teeth will be pearly white.

24) If you want a good job, then you'll get a high school diploma.

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