Conditional Statement - If, then statement

If p, then q.

\[ p \rightarrow q \]

Hypothesis (If)

p

Conclusion

q

Ex. Write your own example of a conditional statement.

If you don't exercise regularly, you won't be healthy.

Ex. Identify the hypothesis and conclusion.

Ex. Put the given information in a conditional statement. Get $1500 cash back when you buy a new car.

If you buy a new car, then you get $1500 cash back.

Converse statement - Exchange the hypothesis & conclusion

\[ q \rightarrow p \]

If you get $1500 cash back, then you bought a new car.

Negation ~ opposite

Inverse statement

If you don't buy a new car, then you won't get $1500.

\[ \neg p \rightarrow \neg q \]

Contrapositive statement

If you don't get $1500, then you didn't buy a car.

Ex. Write the converse, inverse, and contrapositive of the statement:

If a shape is a square, then it is a rectangle.

\[ q \rightarrow p \]

If it's a rectangle, then it's a square.

\[ p \rightarrow \neg q \]

If it's not a square, then it's not a rectangle.

\[ \neg q \rightarrow \neg p \]

If it's not a rectangle, then it's not a square.