Serens Gilham Blank tof

Write the negation for the following statements

1. If it rains outside, then I will go to the store

Write the truth tables for the following statements.

2. There exists a car that has 6 wheels

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3. [~(A=>B)]

4. [A^~B]

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5. Are the previous Truth tables logically equivalent? If so how can you tell

Write the converse, inverse, and contrapositive for the following statements

- 6. If the sky is blue, then the sun is up
 - a. Converse:
 - b. Inverse:
 - c. Contrapositive:
- 7. If Henry is wet then it is raining outside
 - a. Converse:
 - b. Inverse:
 - c. Contrapositive:

Consider the statement						
If the light is on, then we are home						
Identify the following						
8. Hypothesis	[41a]-1					
9. Antecedent						
10. Necessary condition						
11. Sufficient condition						
12. Conclusion	[8-YA] _	5-				
Prove the following statements 13. If two integers are odd, then their sum is even. Proof:						
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Write the converse, inverse, and contrapazione for the following statements						

14. An integer n is even if and only if n^2 is even

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Jerens Gilhan Test answess

Write the negation for the following statements

- 1. If it rains outside, then I will go to the store It is raining outside, and I will not go the store
- 2. There exists a car that has 6 wheels All Cars do not have 6 wheels

Write the truth tables for the following statements.

3. $[^{(A=>B)}]$

Α	В	A=>B	~(A=>B)
Т	T	T	F
T	F	F	Т
F	Т	T	F
F	F	Т	F

4. [A^~B]

]	Α	В	~B	A^~B
ų	SLOW TYPE	T-113(2-013	FERRINA P	SE18 - 7.50
	T	F	T	Т
	F	T	F	F
	F	F	Т	F

5. Are the previous Truth tables logically equivalent? If so how can you tell

They are logically equivalent because the last columns of the truth values are the same

Write the converse, inverse, and contrapositive for the following statements

- 6. If the sky is blue, then the sun is up
 - a. Converse: If the sun is up then the sky is blue.
 - b. Inverse: If the sky is not blue then the sun is down.
 - c. Contrapositive: If the sun is down then the sky is not blue.
- 7. If Henry is wet then it is raining outside
 - a. Converse: If it is raining outside then Henry is wet.
 - b. Inverse: If Henry is dry then it is not raining outside.
 - c. Contrapositive: If it is not raining outside, then Henry is dry.

Consider the statement

If the light is on, then we are home

Identify the following

- 8. Hypothesis
 If the light is on
- 9. Antecedent If the light is on
- 10. Necessary condition
 We are home
- 11. Sufficient condition If the light is on
- 12. Conclusion
 We are home

Prove the following statements

13. If two integers are odd, then their sum is even.

Proof:

Suppose x and y are odd integers. Then x and y can be written as x=2k and y=2a for some a and k integers

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=2k+2a

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=2(k+a)

(factoring) and to animal critical and represent treatment villaged in entit

Since intergers are closed over addition(k+a) is an integer

Thus, by def of even x+y is even

14. An integer n is even if and only if n^2 is even a unit count and a large with the second of the

Proof

Case1:

Suppose n is an even integer.

By def of even n=2k for some k in the integers

n*n

=2k*2k

=2(2kk)

Since integers are closed over multiplication 2kk is an integer

By def of even n^2 is even

Case2:

N is an even integer and n^2 is odd

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Proof:
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Let n be an odd integer and n^2 be even

By def of even n=2k for some k in the integers

n*n

=(2k+1)*(2k+1)

=4k^2+4k+1

=2(2k^2+2k)+1

By the closure property of integers (2k^2+2k) is an integer.

By def of odd n*n is odd

This is a contradiction because n^2 cannot be both odd and even

Thus if n is even n^2 is also even

Proof:

Let n be an odd integer and a^2 be ever

By def of even n=2k for some k in the integer

n⁴n

#(2k+1)*(2k+1)

- 4k^2+4k+]

=2(2k^2+2k)+

By the closure property of integers $(2k^2+2k)$ is an integer.

By def of odd n"n is odd

This is a contradiction because n^2 cannot be both odd and even

Thus if n is even n^2 is also even