The conditional statement is: If a figure is a quadrilateral, then it is a square.

What is the relation to the original statement and truth value for the following?
If a figure is not a square, then it is not a quadrilateral.

a. Biconditional and F
b. Inverse and F
c. Converse and T
d. Contrapositive and F

e. Contrapositive and T
f. Converse and F
g. Biconditional and T
h. Inverse and T

The conditional statement is: If an angle is a right angle, then its measure is 90 degrees.

What is the relation to the original statement and truth value for the following?
If an angle's measure is not 90 degrees, then it is not a right angle.

a. Inverse and F
b. Inverse and T
c. Contrapositive and T
d. Contrapositive and F

e. Biconditional and T
f. Biconditional and F
g. Converse and T
h. Converse and F

The conditional statement is: If a figure is a quadrilateral, then it is a square.

What is the relation to the original statement and truth value for the following?
If a figure is a square, then it is a quadrilateral.

a. Biconditional and T
b. Contrapositive and F
c. Inverse and F
d. Converse and T

e. Biconditional and F
f. Converse and F
g. Inverse and T
h. Contrapositive and T

The conditional statement is: If an angle is a right angle, then its measure is 90 degrees.

What is the relation to the original statement and truth value for the following?
If an angle is not a right angle, then its measure is not 90 degrees.

a. Contrapositive and T
b. Biconditional and T
c. Inverse and F
d. Converse and F

e. Contrapositive and F
f. Inverse and T
g. Biconditional and F
h. Converse and T

Which of the following is an example of deductive reasoning?
a. All students studied for the math test.
    Sally is a student, so she studied for the math test.
b. Tuition at a college has increased over the past several years.
    Therefore, tuition is likely to increase next year.

Which of the following is an example of inductive reasoning?
a. Each time Bob goes to the gas station, he buys a sandwich.
    So, the next time Bob goes to the gas station, he will buy a sandwich.
b. All fish are animals.
    Drippy is a fish, so Drippy is an animal.

The statements below are true. Use the statements to make a new conditional statement that is also true.

If a number is not divisible by 2, then it is odd.
The number 10 is divisible by 2.

a. Not possible with the given number of 10.
b. The number 10 is not divisible by 2.
c. If the number is odd, then the number is divisible by 10.
d. If a number is divisible by 2, then it is odd.

The statements below are true. Use the statements to make a new conditional statement that is also true.

If an angle's measure is less than 90 degrees, then the angle is acute.
The measure of angle A is 76 degrees.

a. If an angle is acute, then the angle measures 76 degrees.
b. If an angle is obtuse, then it has a supplement.
c. If angle A measures 76 degrees, then the angle is acute.
d. The measure of angle B is 76 degrees.

Complete the two-column proof.

Given: $11x - 6y = 1$; $x = 6$

Prove: $\dfrac{65}{4} = y$

$11x - 6y = 1$; $x = 6$	a. ____
$66 - 6y = 1$	b. ____
$-6y = -65$	c. ____
$y = \dfrac{65}{4}$	d. ____
$\dfrac{65}{4} = y$	e. ____

a.
  a. Given
  b. Symmetric Property of Equality
  c. Subtraction Property of Equality
  d. Division Property of Equality
  e. Reflexive Property of Equality

b.
  a. Given
  b. Substitution Property
  c. Subtraction Property of Equality
  d. Addition Property of Equality
  e. Symmetric Property of Equality

c.
  a. Given
  b. Substitution Property
  c. Subtraction Property of Equality
  d. Division Property of Equality
  e. Symmetric Property of Equality

d.
  a. Given
  b. Substitution Property
  c. Subtraction Property of Equality
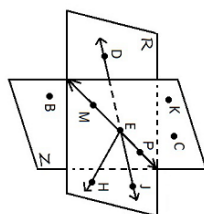 d. Division Property of Equality
  e. Reflexive Property of Equality

What is the value of x? Justify each step.

$AC = 23$

A 3x B 4x + 2 C

Drawing not to scale

$AB + BC = AC$	a. ____
$3x + 4x + 2 = 23$	b. ____
$7x + 2 = 23$	c. ____
$7x = 21$	d. ____
$x = 3$	e. ____

Which of the following statements can be assumed based on the given diagram? Select all that apply.

a. Points J, E, and D are collinear.
b. Points P, E, and B are collinear.
c. Plane R and plane Z intersect at $\overleftrightarrow{EJ}$.

d. $\overleftrightarrow{JE}$ lies in plane R.
e. Plane R and plane Z intersect at $\overleftrightarrow{EP}$.
f. $\angle MEH$ is a right angle.

What is the value of x? Identify the missing justifications.
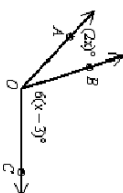
Drawing not to scale

$m\angle AOC = 138$

$m\angle AOB + m\angle BOC = m\angle AOC$	a. ____
$2x + 6(x - 1) = 138$	b. ____
$2x + 6x - 6 = 138$	c. ____
$8x - 6 = 138$	d. ____
$8x = 144$	e. ____
$x = 18$	f. ____

Write the if-then form of the conditional statement.

At midnight you should not swim in the public pool.

Is it possible to provide a conterexample of the converse for this conditional statement? (Yes or No)

If $6x - 2 = 22$, then $x = 4$.

Write the converse of this conditional statement.

If $-2x - 6 = -22$, then $x = 8$.

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Write a biconditional statement of this conditional statement.

If $2x + 6 = 2$, then $x = -2$.

Write the converse of this conditional statement.

If a quadrilateral is a square, then it is a rhombus.

Is it possible to provide a conterexample of the converse for this conditional statement? (Yes or No)

If a quadrilateral is a square, then it is a rhombus.

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