

Identify the hypothesis and conclusion.

If  $x+30=42$ , then  $x=12$

                      
Hypothesis

                      
Conclusion

Identify the hypothesis and conclusion.

If it is the weekend, then it is Saturday.



Hypothesis



Conclusion

Determine the truth value of the statement. If it is false, provide a counterexample.

If the figure has 4 sides then it is a square.

False; rectangle, rhombus, diamond, kite,  
Parallelogram

Determine the truth value of the statement.  
If it is false, provide a counterexample.

If the boy is in science class, then he is in  
Biology.

False; Chemistry, Science Concepts

Write the converse and determine its truth value.

If George lives in Texas, then he lives in the United States.

If he lives in the United States, then George lives in Texas.

False; he could live in any of the 49 other states.

Write the converse and determine its truth value.

If a polygon is a triangle then it has 3 sides.

If it has 3 sides, then a polygon is a triangle.

True

Determine if the biconditional can be written.  
If it can, write it. If it can't explain why it  
can't be written.

If two angles are complements then their  
angle measures add up to 90 degrees.

Two angles are complements if and only if their angle  
measures add up to 90 degrees.

OR

Their angle measures add up to  $90^\circ$  if and only if  
the two angles are complements.

Determine if the biconditional can be written.  
If it can, write it. If it can't explain why it can't  
be written.

If George lives in Texas then he lives in the  
United States.

Biconditional cant be written because  
converse is false.



Write the inverse and determine its truth value.

If the animal has wings, then it is a bird.

If the animal does not have wings then  
It is not a bird.

True

Write the inverse and determine its truth value.

If a number is a multiple of 12, then it is a multiple of 3.

If a number is not a multiple of 12 then it is not a multiple of 3.

False; 6, 33 ect.

Write the Contrapositive and determine its truth value.

If a number is a multiple of 12, then it is a multiple of 3.

If it is not a multiple of 3 then the number is not a multiple of 12.

True

Write the Contrapositive and determine its truth value.

If the student is a sophomore, then the student is in 10th grade.

If the student is not in tenth grade  
then the student is not a sophomore.

True

Identify the properties.

1.  $2p - 30 = -4p + 6$

2.  $6p - 30 = 6$

3.  $6p = 36$

4.  $P = 6$

1. Given

2. Addition property of =

3. Addition property of =

4. Division property of =

Identify the property.

$$\overline{AC} \cong \overline{AC}$$

Reflexive Property of Congruence ( $\cong$ )

Identify the property.

If  $\angle A \cong \angle C$ ,  $\angle C \cong \angle D$  then  $\angle A \cong \angle D$

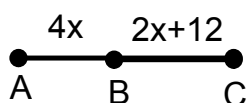
Transitive Property of Congruence ( $\cong$ )

Identify the property.

If  $PQ \cong RS$  then  $RS \cong PQ$

Symmetric Property of Congruence ( $\cong$ )





1. B is the midpoint of AC

2.  $AB = BC$

3.  $4x = 2x + 12$

4.  $2x = 12$

5.  $x = 6$

1. Given

2. Definition of Midpoint

3. Substitution

4. Subtraction Property  
of Equality

5. Division property  
of Equality

## Justify each step

1.  $3x+25=9x-5$

2.  $25=6x-5$

3.  $30=6x$

4.  $5=x$

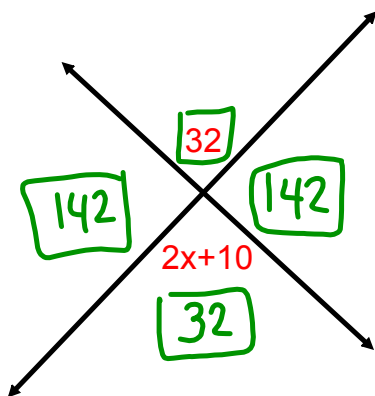
1. Given

2. Subtraction Property of Equality

3. Addition Property of Equality

4. Division Property of Equality

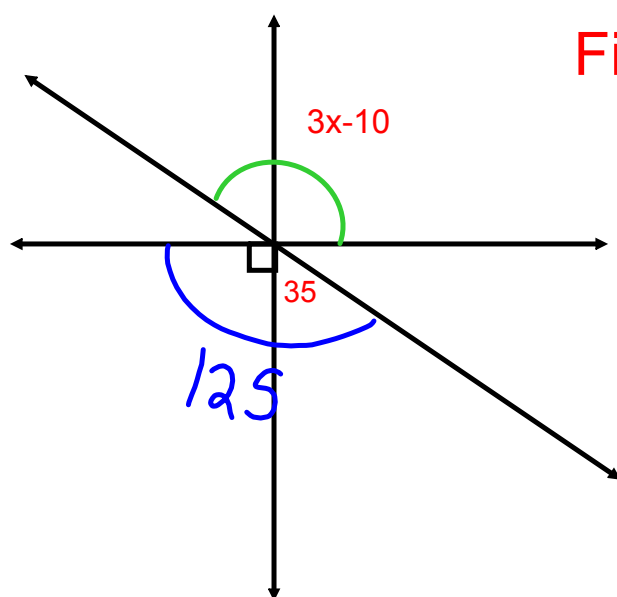
Solve for x and determine the value of each angle.



$$2x + 10 = 32$$

$$2x = 22$$

$$x = 11$$



Find the value of  $x$ .

$$3x - 10 = 125$$

$$3x = 135$$

$$x = 45$$

Find the measure of the complement and supplement.

$$\angle A = 5$$

Complement:  $85^\circ$   
Supplement:  $175^\circ$

Find the measure of the complement  
and supplement.

$$\angle A = 32.5$$

Complement: 57.5

Supplement: 147.5

$\angle A$  and  $\angle B$  are complementary, find  $x$ ,  $\angle A$  and  $\angle B$ .

$$\angle A = x + 10$$

$$\angle B = 2x - 7$$

$$\angle A + \angle B = 90$$

$$x + 10 + 2x - 7 = 90$$

$$3x + 3 = 90$$

$$x = 29$$

$$\angle A = 29 + 10$$

$$\angle A = 39$$

$$\angle B = 2(29) - 7$$

$$\angle B = 51$$

$\angle A$  and  $\angle B$  are supplementary, find  $x$ ,  $\angle A$  and  $\angle B$ .

$$\angle A = x - 9$$

$$\angle B = 4x + 14$$

$$\angle A + \angle B = 180^\circ$$

$$x - 9 + 4x + 14 = 180$$

$$5x - 5 = 180$$

$$x = 37$$

$$\angle A = 37 - 9$$

$$\angle A = 28$$

$$\angle B = 4(37) + 14$$

$$\angle B = 162$$