



# Angle Relationships Presentation

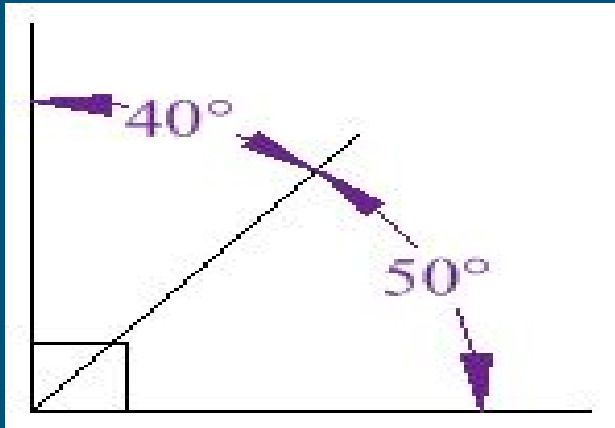
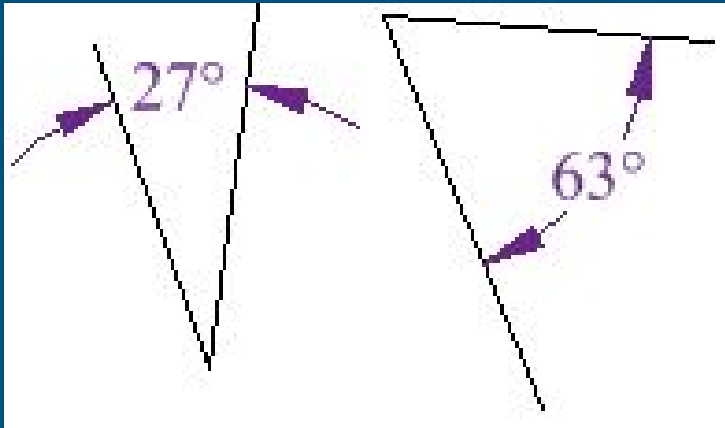


By: Kyle Villano



# Complementary Angles

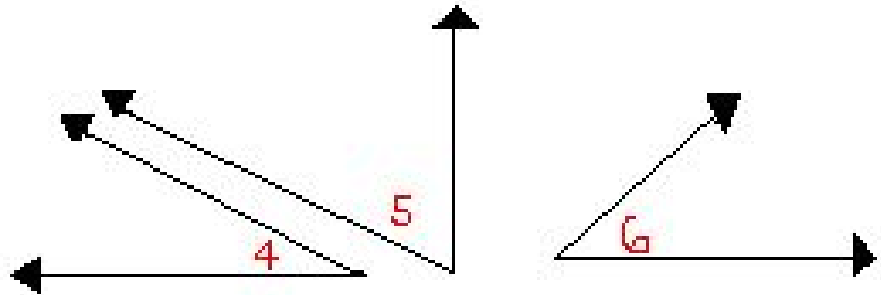
Complementary angles are two angles that add up to 90 degrees.



# Congruent Complements Theorem

If 2 angles are complementary to the same angle, then they are congruent to each other.

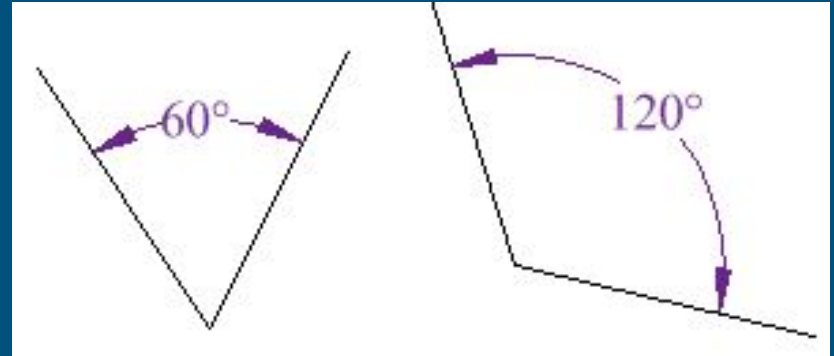
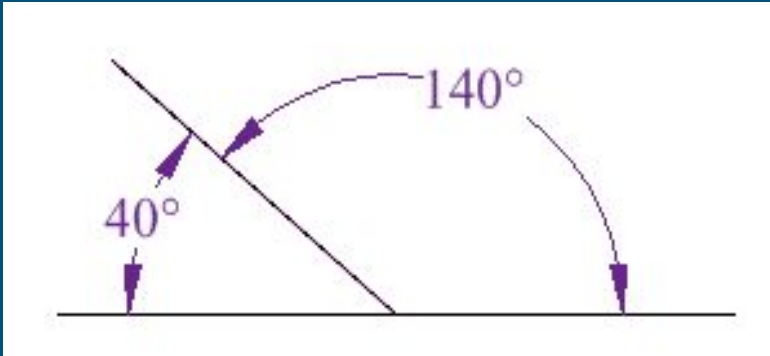
Complements are 90 degrees



If  $\angle 4$  and  $\angle 5$  are complementary and  $\angle 6$  and  $\angle 5$  are complementary, then  $\angle 4$  is congruent to  $\angle 6$ .

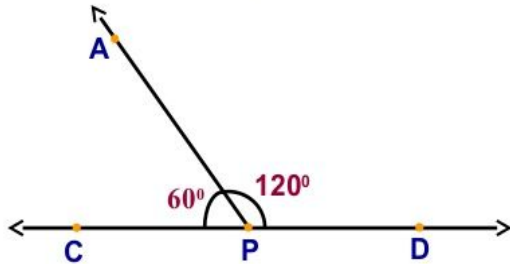
# Supplementary Angles

When the sum of two angles is equal to 180 degrees.



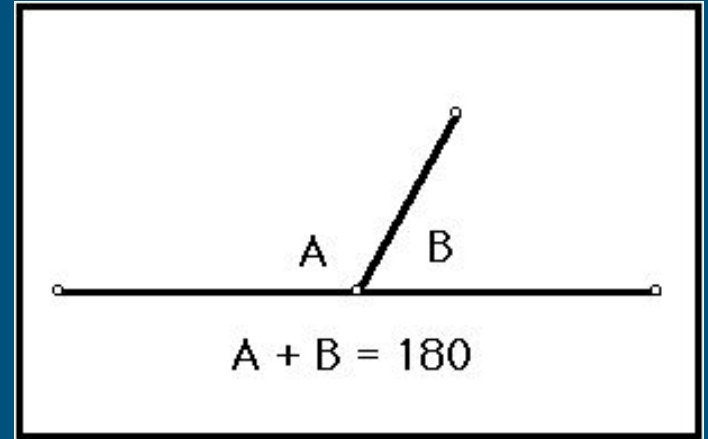
# Linear Pair Postulate

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



$$\angle APC + \angle APD$$

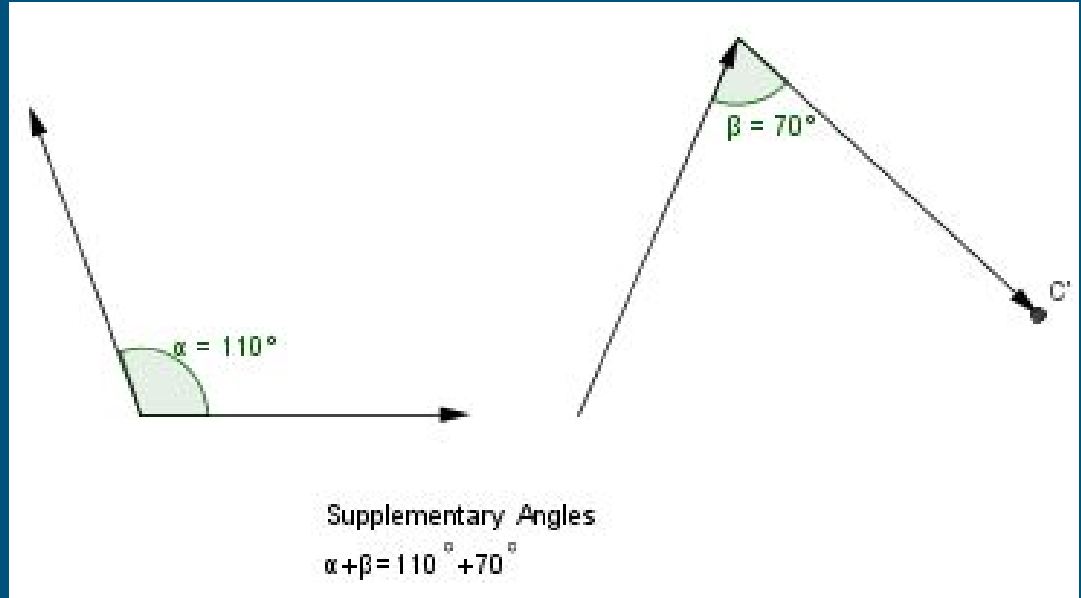
$$60^\circ + 120^\circ = 180^\circ$$



# Congruent Supplements Theorem

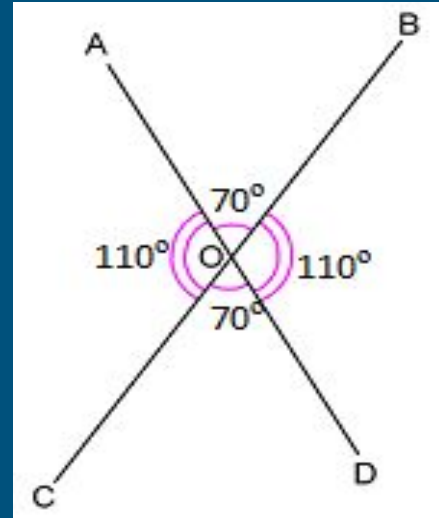
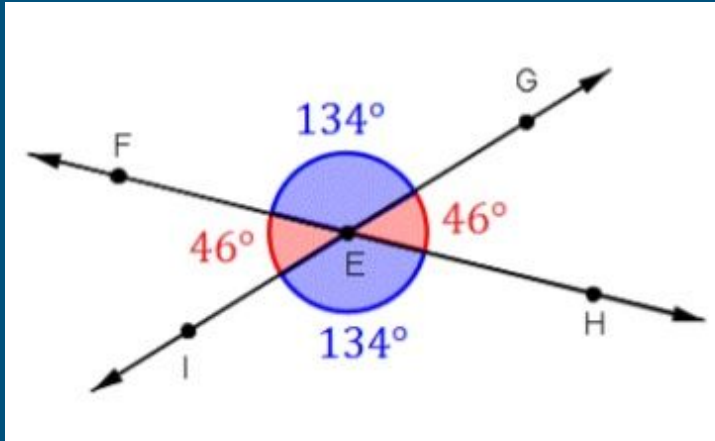
If two angles are Supplements of the same angle, then the two angles are congruent.

Supplements are 180 degrees



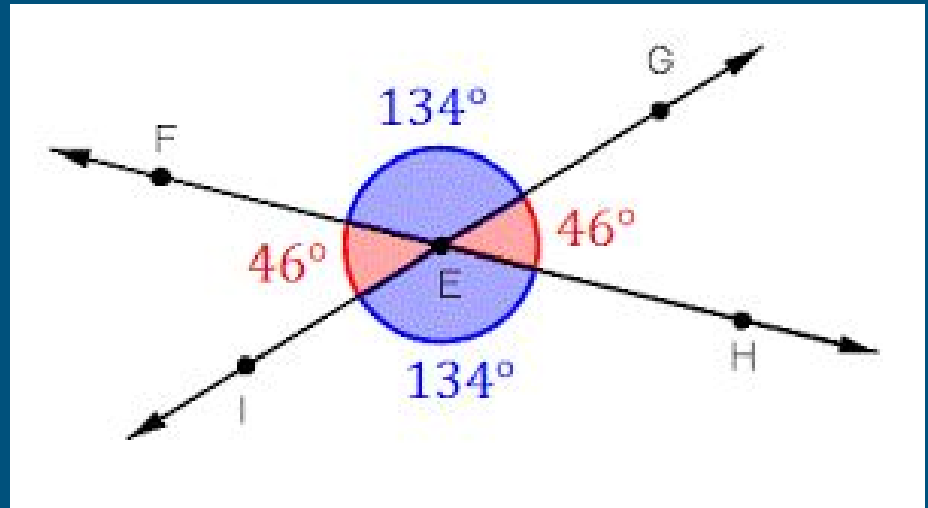
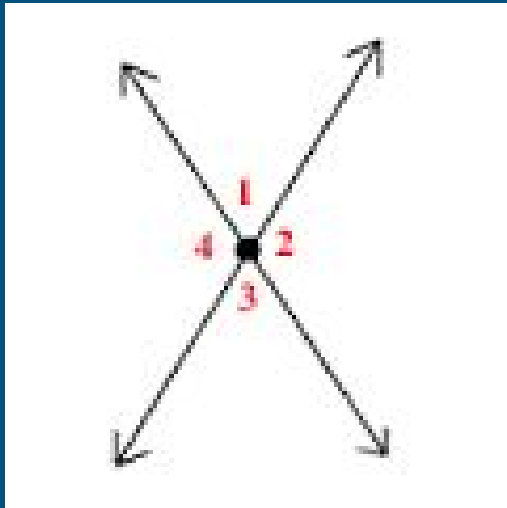
# Vertical Angles

The angles opposite of each other when the two lines intersect (cross)



# Vertical Angles Theorem

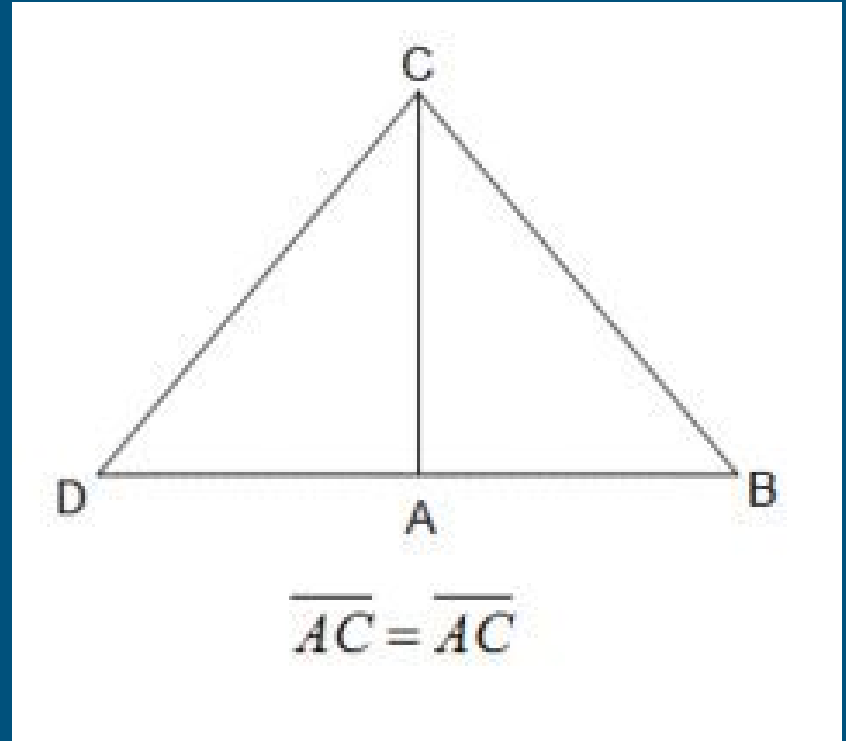
That vertical angles are always congruent.





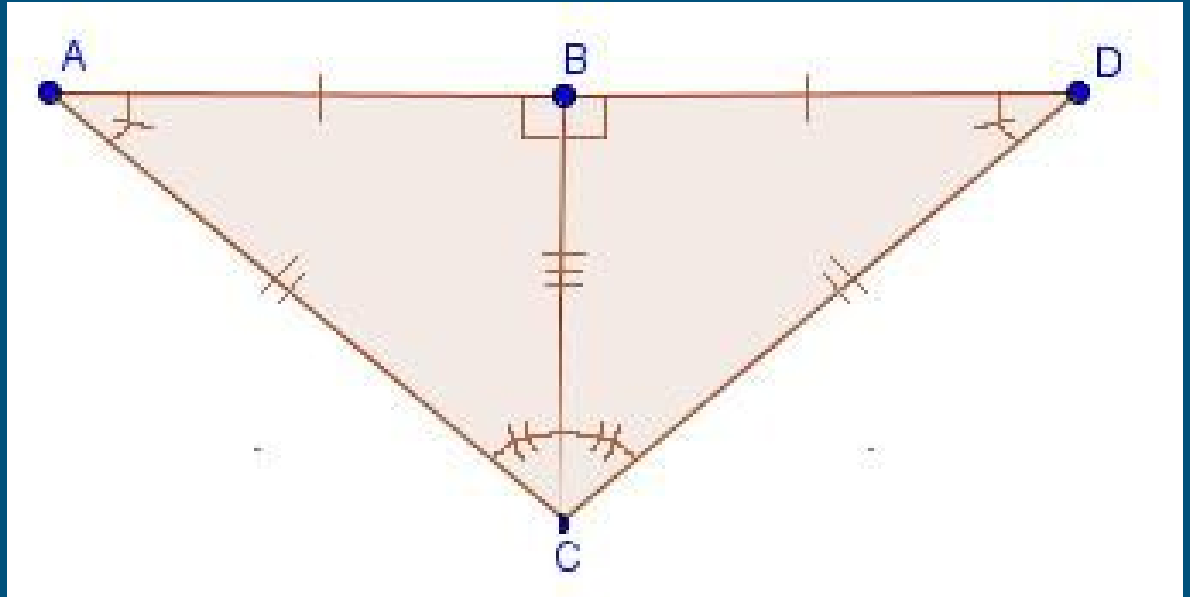
# Reflexive Property

The property that  $X=X$ .



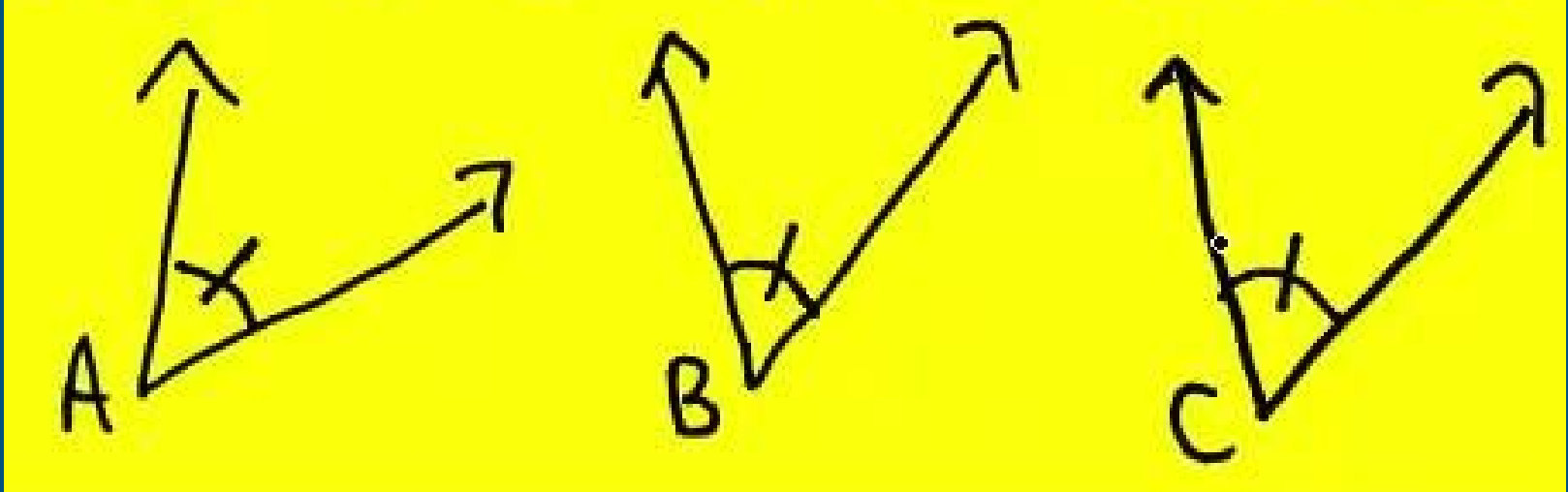
# Symmetric Property

A property that  $X=Y$  and  $Y=X$ .



# Transitive Property

Property that states that if  $X=Y$  and  $Y=Z$  then  $X=Z$ .



# Addition Property of Equality

If you add the same number to both sides of an equation, then both sides remain equal and the equation remains true.

Numbers

$$3 = 3$$

$$3 + 2 = 3 + 2$$

$$5 = 5$$

Algebra

$$a = b$$

$$a + c = b + c$$

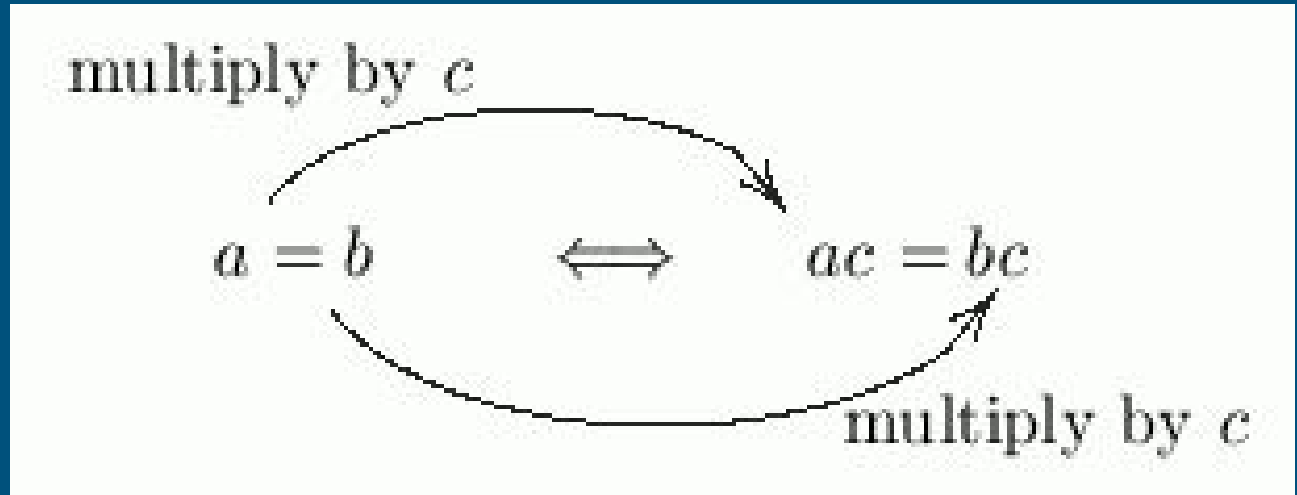
# Subtraction Property of Equality

If you subtract the same number from both sides of an equation, then both sides remain equal and the equation remains true.

Numbers	Algebra
$7 = 7$	$a = b$
$7 - 5 = 7 - 5$	$a - c = b - c$
$2 = 2$	

# Multiplication Property of Equality

If you multiply the same number to both sides of an equation, then both sides remain equal and the equation remains true.



# Division Property of Equality

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If you divide the same nonzero number from both sides of an equation, then both sides remain equal and the equation remains true.

$$10 / 2 = 10 / 2$$

$$5 = 5$$

# Substitution Property

Property that states that if  $X=Y$ , then  $X$  can be replaced by  $Y$  in any equation or expression.

## SUBSTITUTION PROPERTY OF EQUALITY

### substitution property of equality

if  $x=y$ , then  $x$  can be substituted in for  $y$  in any equation, and  $y$  can be substituted for  $x$  in any equation

$$x = y$$

and we have the equation

$$x + 5 = 7$$

substitute  $y$  for  $x$  and write the equation as

$$y + 5 = 7$$



# The End

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Thank you for watching. Do you have any questions?