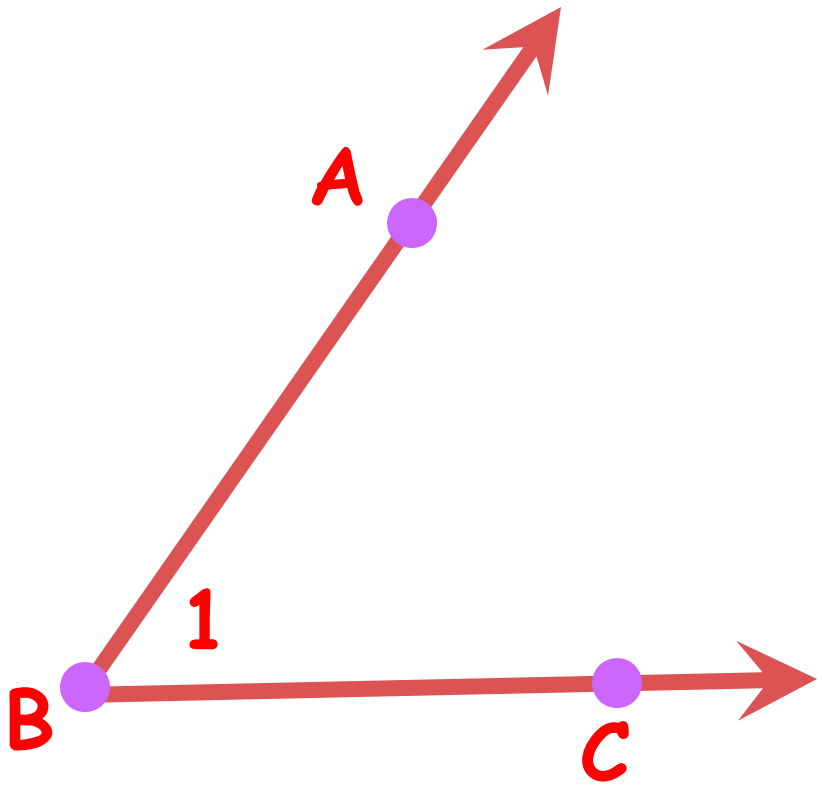
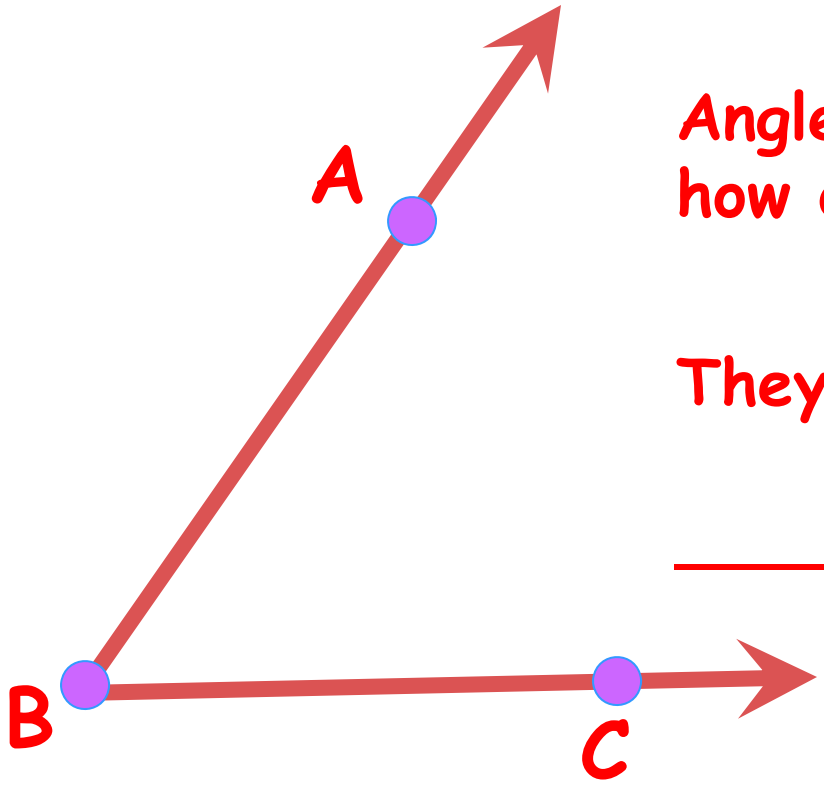
12.1&12.2

ADJACENT, VERTICAL, COMPLEMENTARY, AND SUPPLEMENTARY ANGLES

Naming an Angle



Measurement of Angles

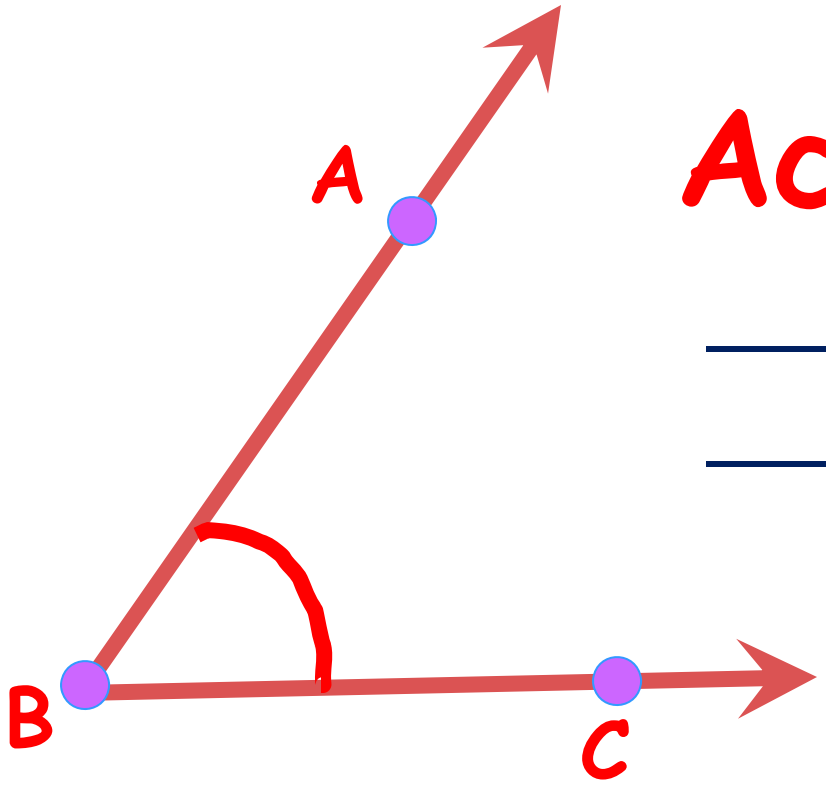


Angles are measured on how open they are.

They're measured by

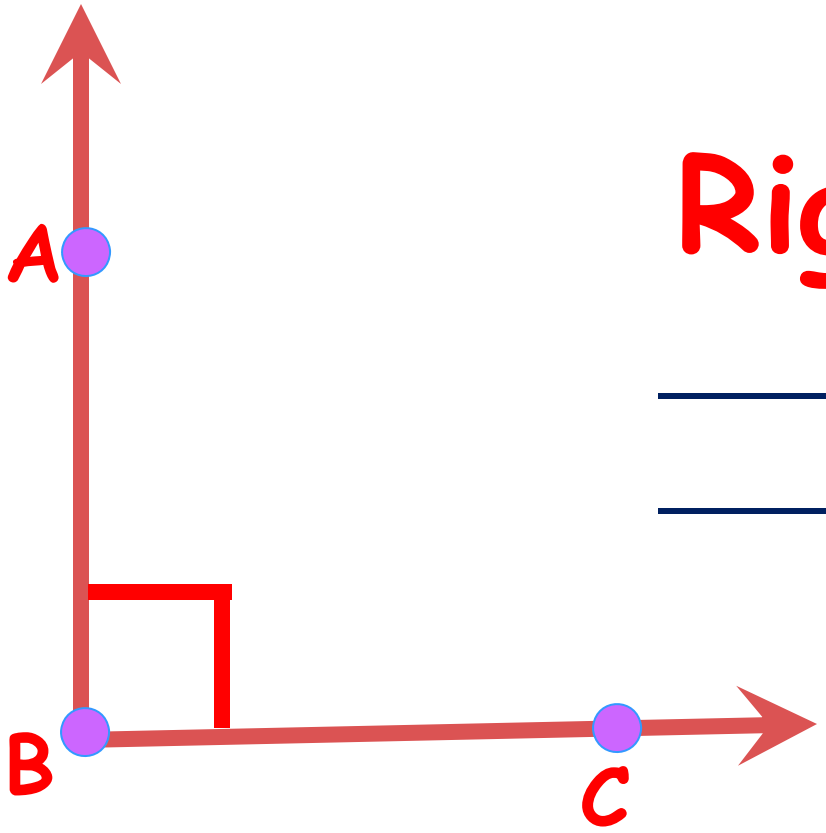
_____.

Kinds of Angles



Acute Angle

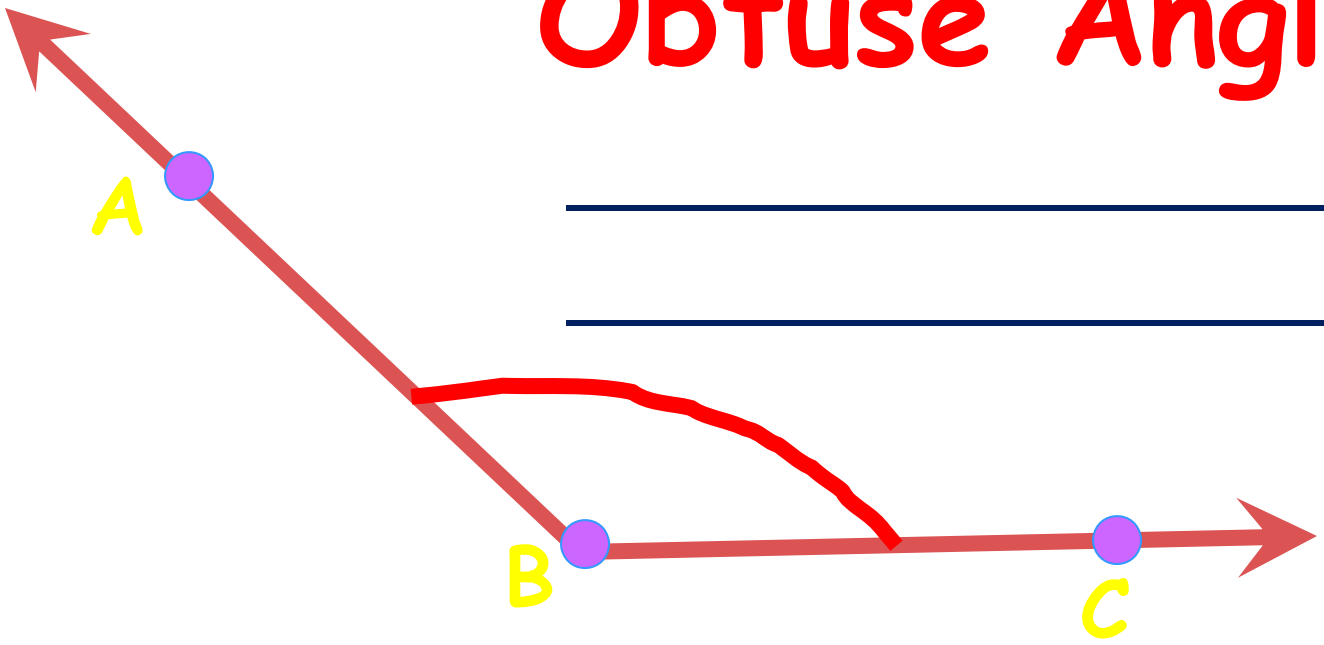
Kinds of Angles



Right Angle

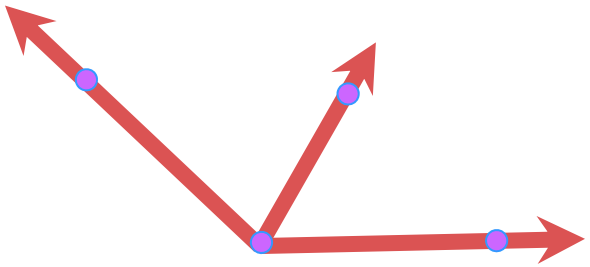
Kinds of Angles

Obtuse Angle

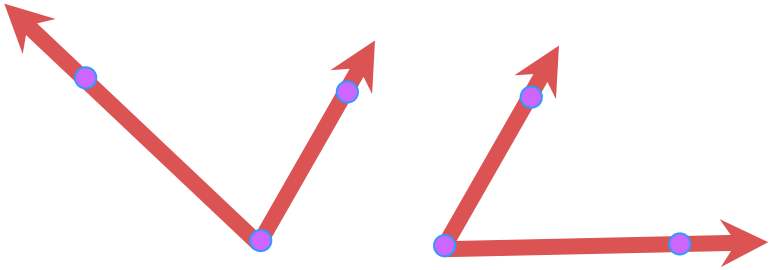


WHAT ARE ADJACENT ANGLES?

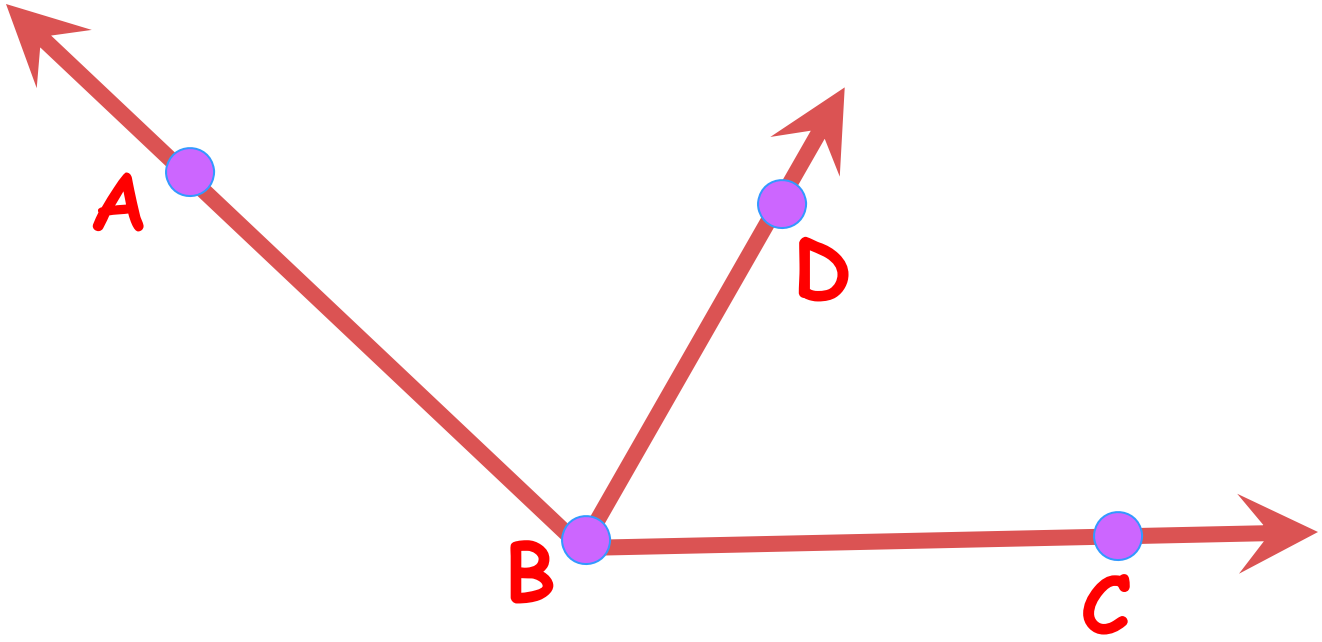
Adjacent Angles



Not Adjacent Angles



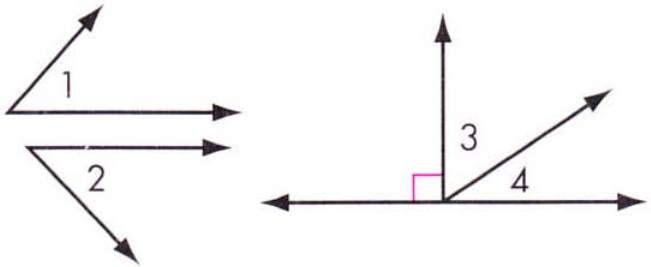
ADJACENT ANGLES



Adjacent angles are angles _____ to each other and share a _____ _____.

1) Define complementary angles

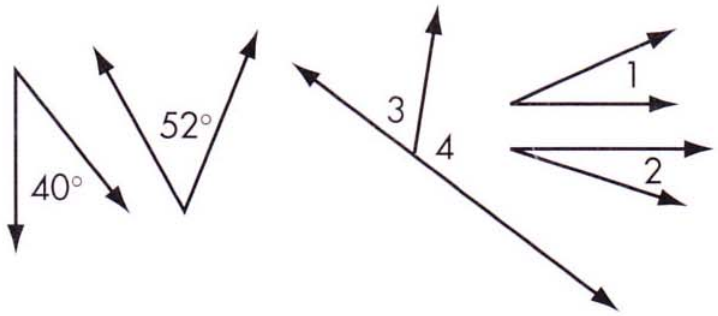
Pairs of complementary angles



$m\angle 1 + m\angle 2 = 90^\circ$

$m\angle 3 + m\angle 4 = 90^\circ$

Not pairs of complementary angles

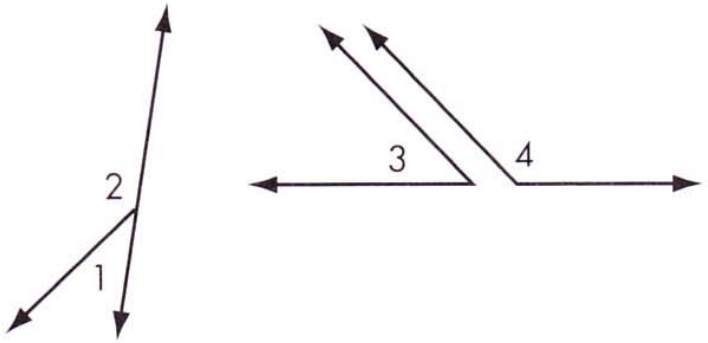


$m\angle 1 + m\angle 2 < 90^\circ$

Note: Sometimes it's convenient to name angles in a diagram with a number.

2) Define supplementary angles

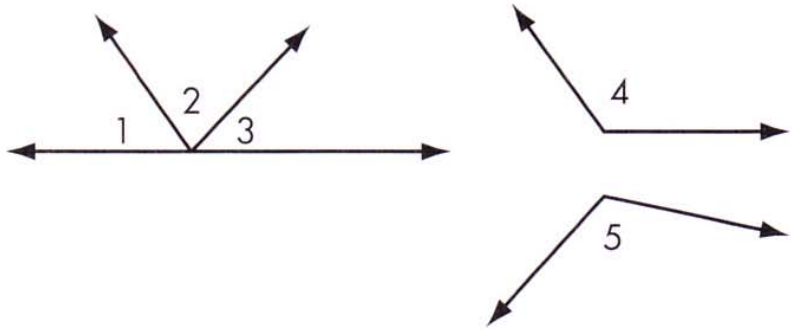
Pairs of supplementary angles



$m\angle 1 + m\angle 2 = 180^\circ$

$m\angle 3 + m\angle 4 = 180^\circ$

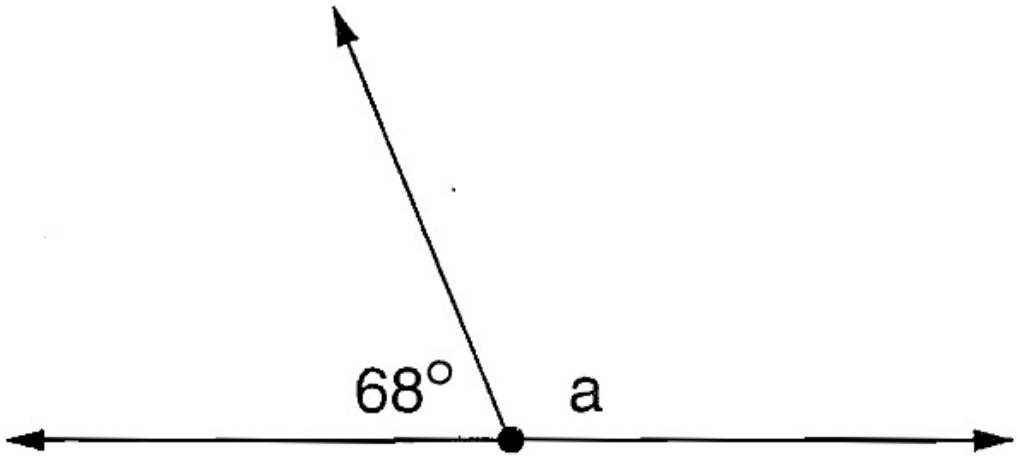
Not pairs of supplementary angles



$m\angle 1 + m\angle 2 < 180^\circ$

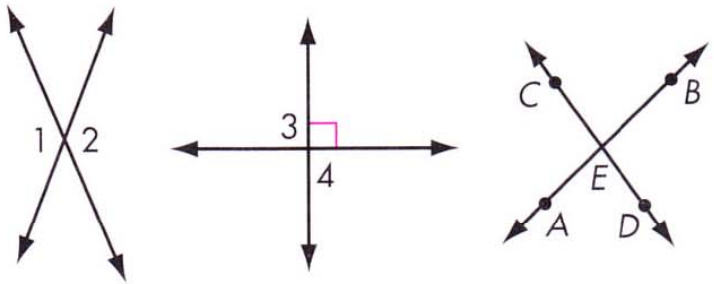
$m\angle 4 + m\angle 5 > 180^\circ$

Find the missing angle.



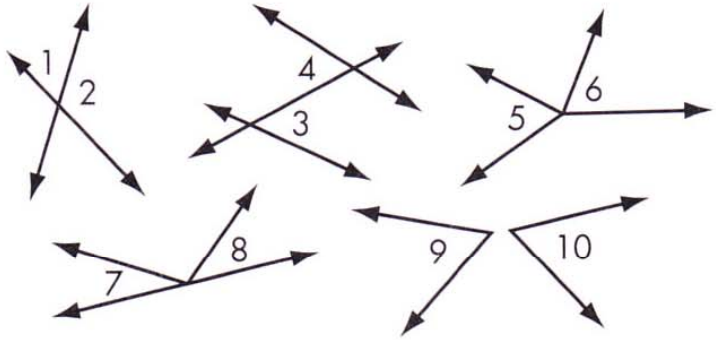
3) Define vertical angles

Pairs of vertical angles



$\angle 1$ and $\angle 2$ are a pair of vertical angles.
$\angle 3$ and $\angle 4$ are also vertical angles.
$\angle AED$ and $\angle BEC$ are also vertical angles.

Not pairs of vertical angles



$\angle 1$ and $\angle 2$, $\angle 3$ and $\angle 4$, $\angle 5$ and $\angle 6$, $\angle 7$ and $\angle 8$, and $\angle 9$ and $\angle 10$ are not pairs of vertical angles.

Two angles are vertical angles when they are

_____ formed by _____.

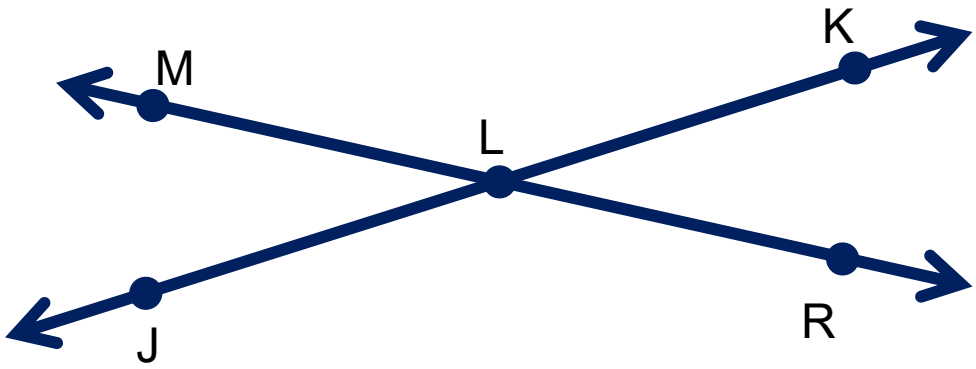
Vertical angles are _____, meaning

they have the same measure.

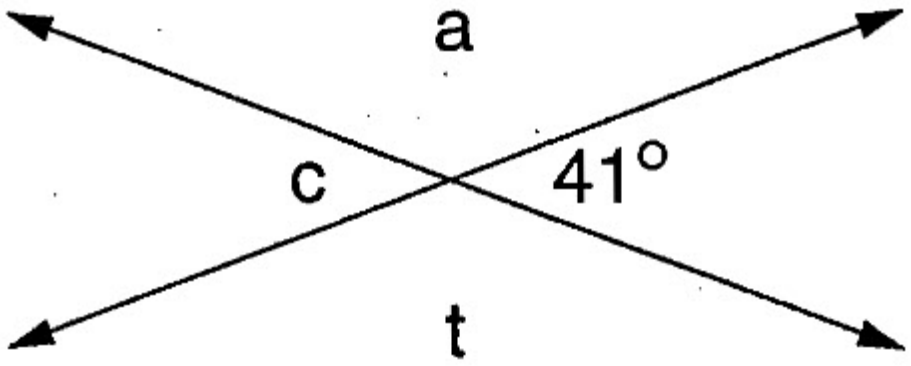
Do you understand?

Name ***two pairs*** of adjacent angles and ***two pairs*** of vertical angles in the figure.

Adjacent Angles	**Vertical Angles**
a) _____ & _____	a) _____ & _____
b) _____ & _____	b) _____ & _____



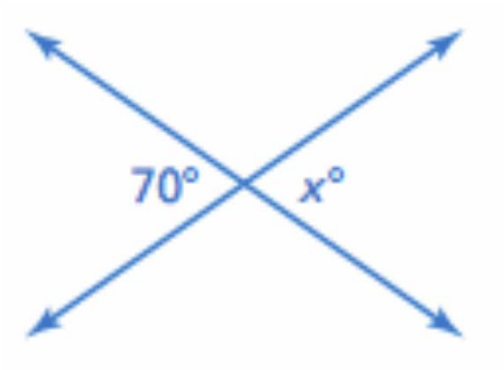
Find the missing angles.



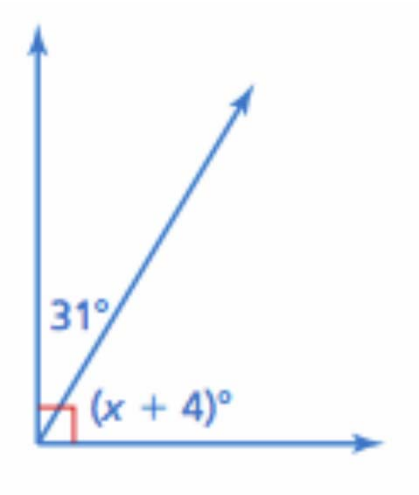
Using Adjacent and Vertical Angles

Tell whether the angles are *adjacent* or *vertical.* Then find the value of *x.*

a)



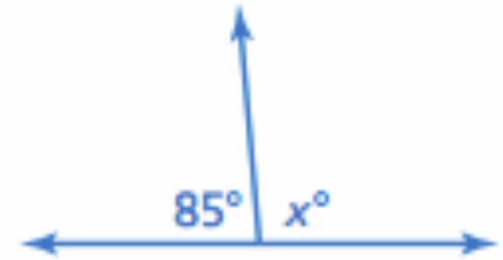
b)



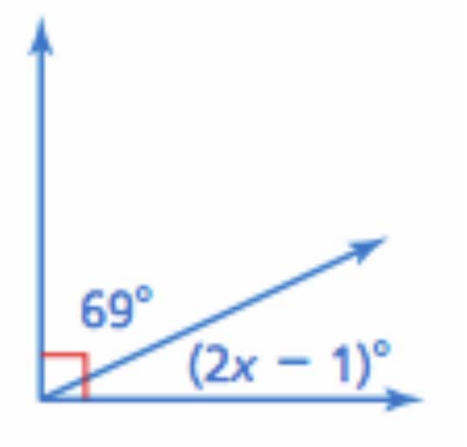
Using Adjacent and Vertical Angles

Tell whether the angles are *adjacent* or *vertical.* Then find the value of *x.*

c)

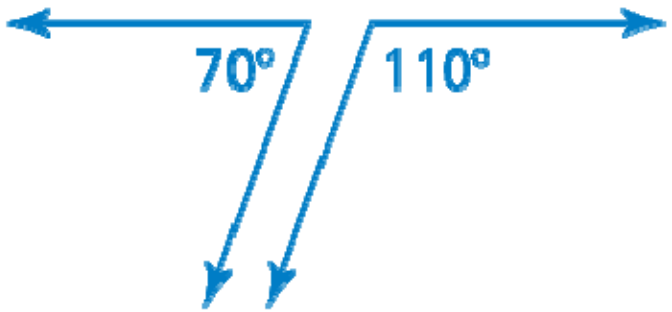


b)

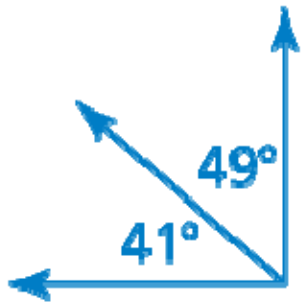


Tell whether the angles are *complementary*, *supplementary*, or *neither*.

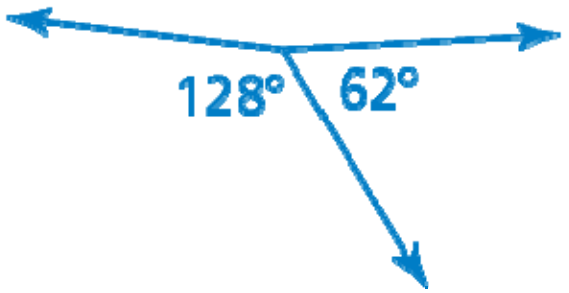
a.



b.

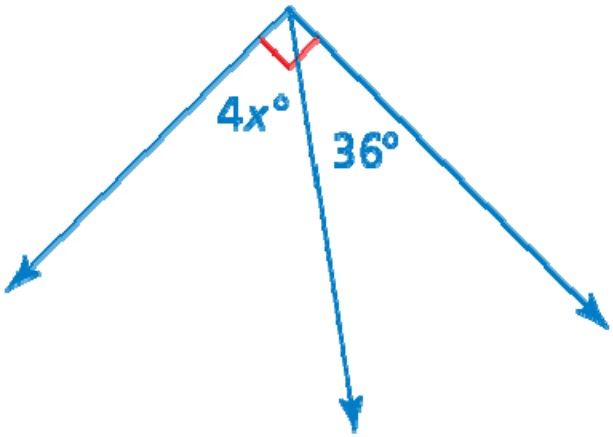


c.

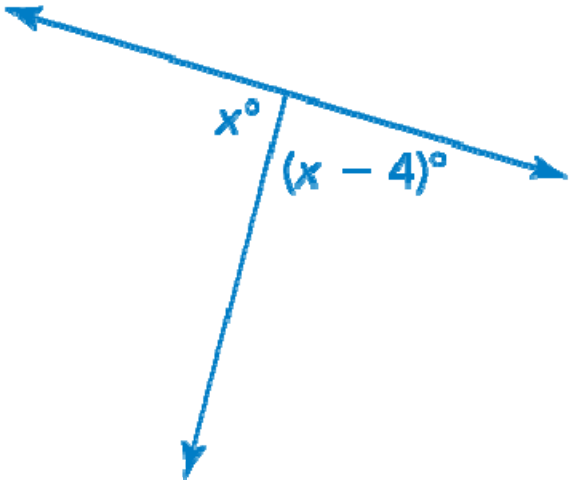


Tell whether the angles are *complementary* or *supplementary*. Then find the value of x.

a.



b.



Do you understand?

Use the given information to solve each problem.

Angle 1 and 2 are *supplementary*.

$$m\angle 1 = 50^\circ \text{ and } m\angle 2 = 3x^\circ$$

a) Write an equation and find the value of x.

b) Use the value of x to find the measure of angle 2.

Do you understand?

Use the given information to solve each problem.

Angle 1 and 2 are *complementary*.

$$m\angle 1 = x^\circ \text{ and } m\angle 2 = 2x^\circ$$

a) Write an equation and find the value of x.

b) Use the value of x to find the measure of angle 2.