

March 23, 2015

Starter

4th

$$\begin{aligned} \textcircled{1} \quad 2x + 3 &= -9 \\ -3 & \quad -3 \\ \hline 2x &= -12 \\ \frac{2}{2} & \quad \frac{2}{2} \\ \hline x &= -6 \end{aligned}$$

$$\begin{aligned} \textcircled{2} \quad -10 &= 2 + 3k \\ -2 & \quad -2 \\ \hline -12 &= 3k \\ \frac{-12}{3} &= \frac{3k}{3} \\ -4 &= k \\ k &= -4 \end{aligned}$$

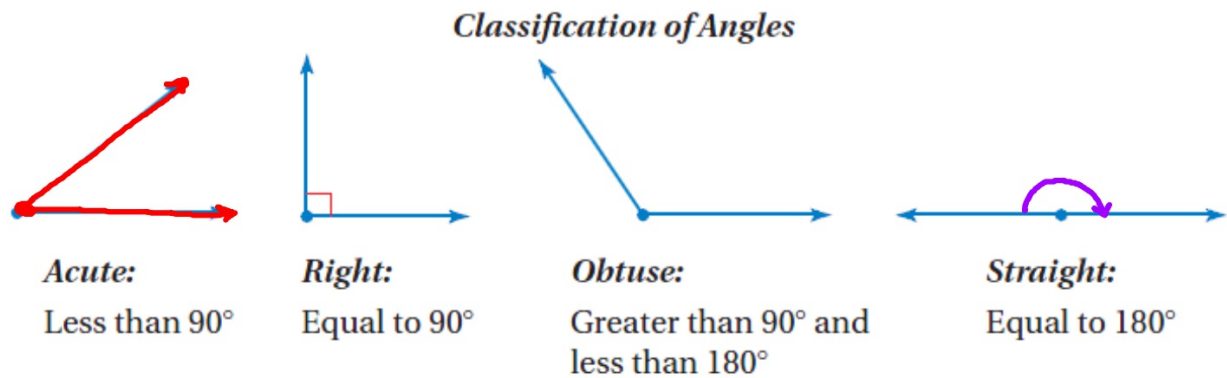
$$\begin{aligned} \textcircled{3} \quad \frac{n}{-3} + 4 &= -3 \\ -4 & \quad -4 \\ \hline \frac{n}{-3} &= -7 \\ -3 \cdot \frac{n}{-3} &= -7 \cdot -3 \\ n &= 21 \end{aligned}$$

$$\begin{aligned} \textcircled{4} \quad -9 &= 6 + \frac{k}{4} \\ -6 & \quad -6 \\ \hline -15 &= \frac{k}{4} \\ \frac{-15}{1} \cdot \frac{4}{4} &= \frac{k}{4} \cdot \frac{4}{4} \\ -60 &= k \\ k &= -60 \end{aligned}$$

Good Day!

3/23 Adjacent / Vertical Angles

Remember from last year:
What are the different types of angles?



Definition of ANGLE:
2 rays with a common endpoint

New word: ADJACENT

*next to each other,
share a common side*

When two states are **adjacent**,



they are next to each other and they share a common border.

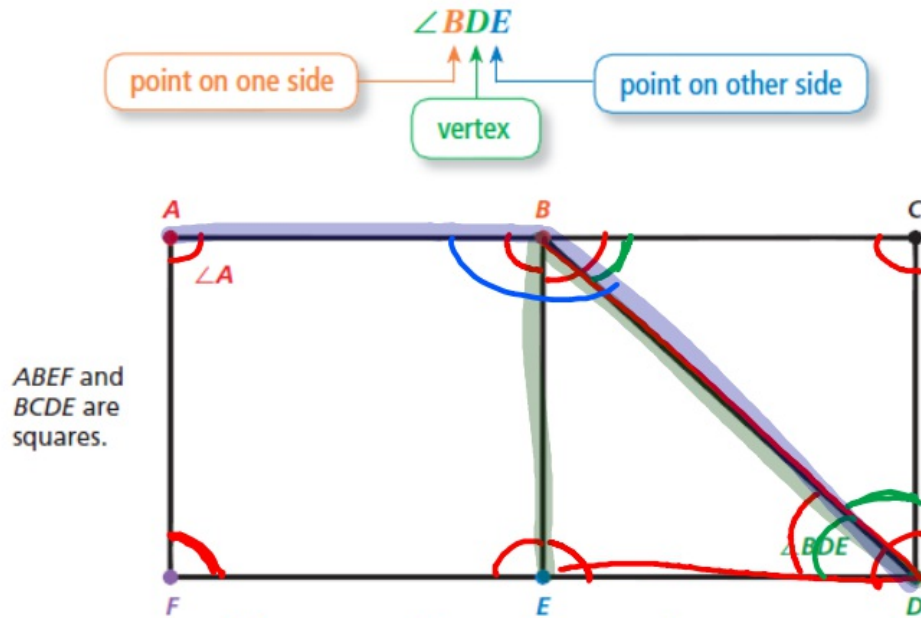


With your partner, come up with a list of things that could be considered 'adjacent.'

*Trees next to each other
Floor tiles
Parking stall
Fruit in bins
Red/White stripes on flag
Cabinets
Books on a shelf*

Work with a partner. Some angles, such as $\angle A$, can be named by a single letter. When this does not clearly identify an angle, you should use three letters, as shown.

\angle
means
"angle"



- a. Name all the right angles, acute angles, and obtuse angles.
- b. Which pairs of angles do you think are *adjacent*? Explain.

a) Right: $\angle A$ $\angle BFE$ $\angle FED$ $\angle EDC$ $\angle BCD$ $\angle EBC$

Acute: $\angle CBD$ $\angle EDB$ $\angle CDB$ $\angle EBD$

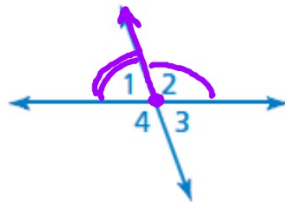
Obtuse: $\angle ABD$

b)

Adjacent Angles

Words Two angles are **adjacent angles** when they **share a common side and have the same vertex.**

Examples



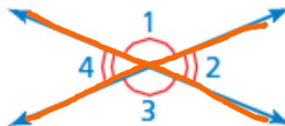
$\angle 1$ and $\angle 2$ are adjacent.

$\angle 2$ and $\angle 4$ are not adjacent.

Vertical Angles

Words Two angles are **vertical angles** when they are **opposite angles formed by the intersection of two lines.** Vertical angles are **congruent angles**, meaning they have the same measure.

Examples



$\angle 1$ and $\angle 3$ are vertical angles.

$\angle 2$ and $\angle 4$ are vertical angles.

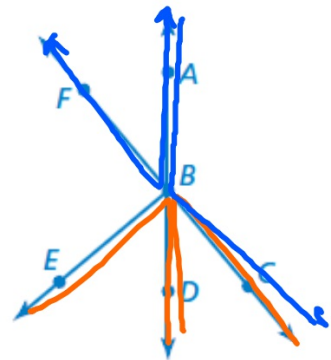
Use the figure shown.

a. Name a pair of adjacent angles.

$\angle CBD$ and $\angle EBD$
 $\angle ABF$ and $\angle ABC$

b. Name a pair of vertical angles.

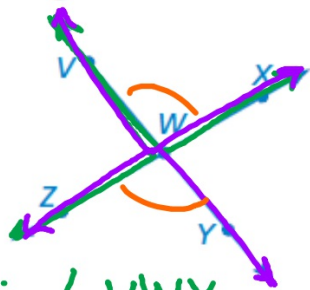
$\angle ABF$ and $\angle DBC$
 $\angle CBA$ and $\angle FBD$



● On Your Own

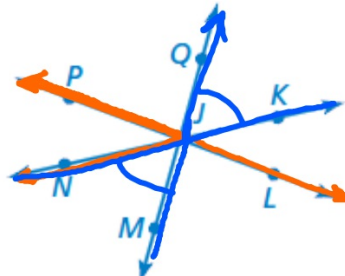
Name ~~one~~ pair of adjacent angles and two pairs of vertical angles in the figure.

1.

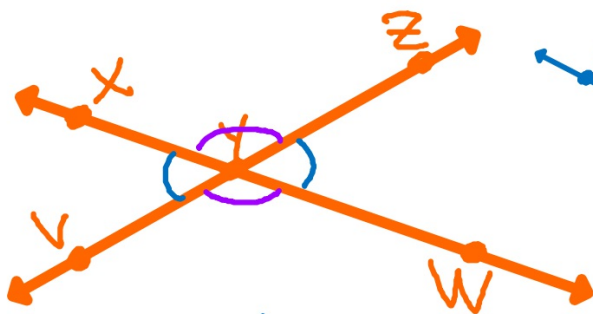


adj: $\angle VWX$
and $\angle VWZ$
vert: $\angle VWX$
and $\angle ZWY$

2.



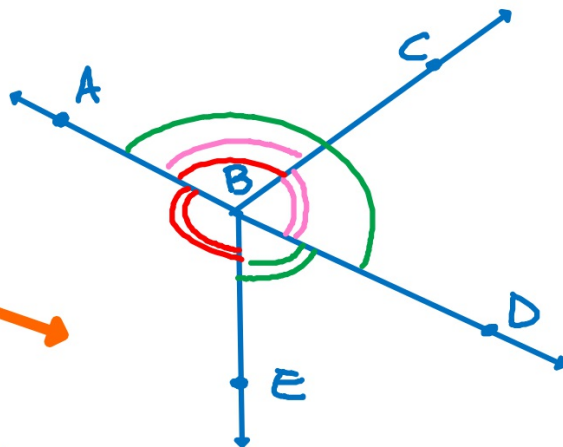
adj: $\angle PJN$
and $\angle PJL$
vert: $\angle KJQ$
and $\angle NJM$



Vertical L's

$\angle XYV$ and $\angle ZYW$

$\angle VYW$ and $\angle ZYX$



Adjacent L's

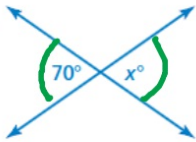
$\angle CBD$ and $\angle ABC$

$\angle EBD$ and $\angle ABD$

$\angle ABC$ and $\angle ABE$

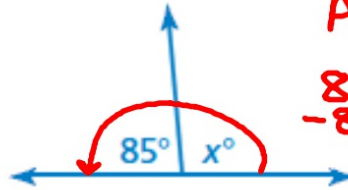
Tell whether the angles are *adjacent* or *vertical*. Then find the value of x .

a.



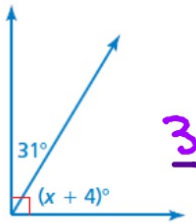
Vertical
 $x = 70$

3.



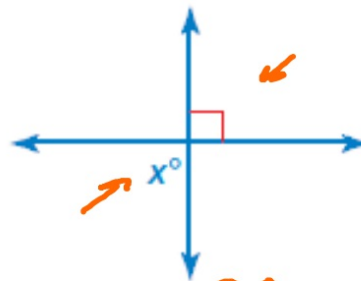
Adj
 $85 + x = 180$
 $-85 \quad -85$
 $x = 95$

b.



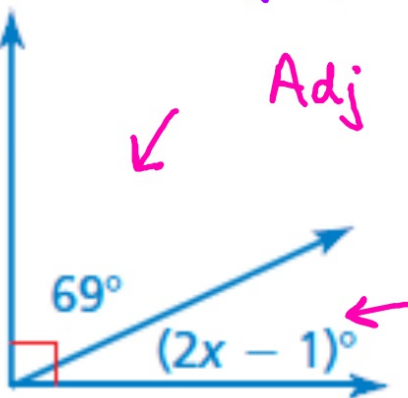
Adj.
 $31 + (x + 4) = 90$
 $35 + x = 90$
 $-35 \quad -35$
 $x = 55$

4.



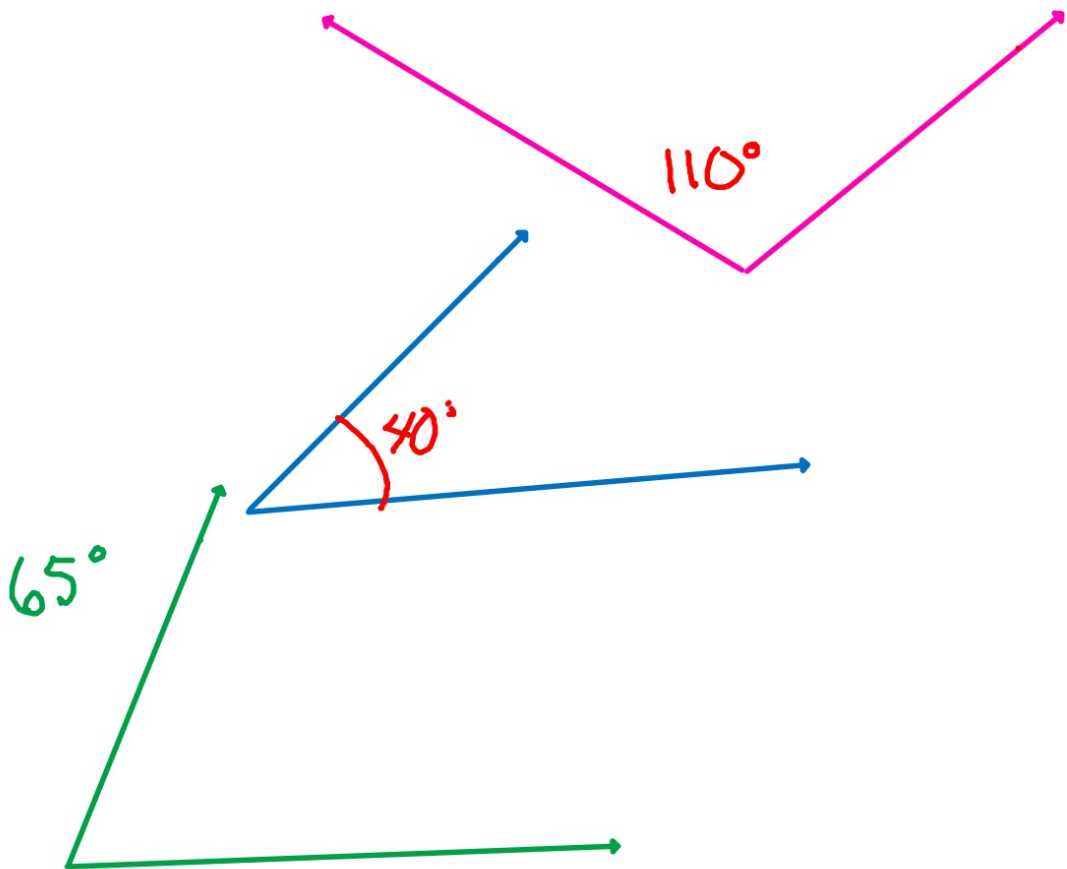
$x = 90$

5.



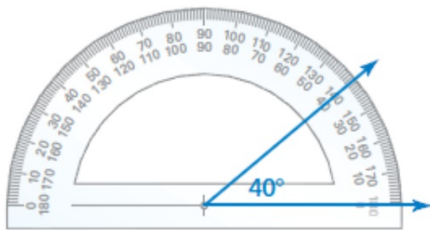
Adj

$69 + (2x - 1) = 90$
 $68 + 2x = 90$
 $-68 \quad -68$
 $2x = 22$
 $\frac{2x}{2} = \frac{22}{2}$
 $x = 11$

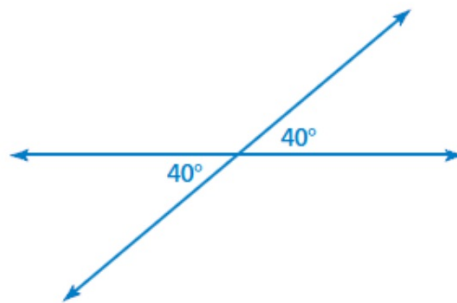


Using a protractor, draw a pair of vertical angles that measure 40°

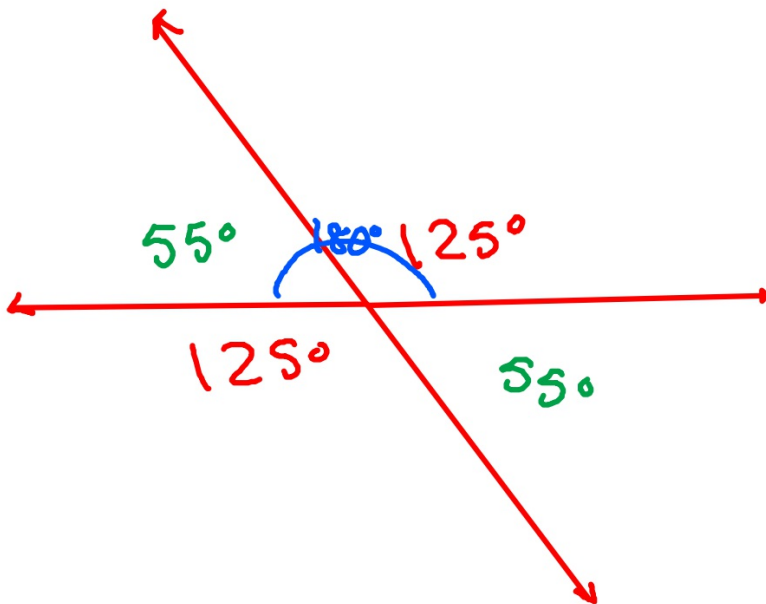
Step 1: Use a protractor to draw a 40° angle.



Step 2: Use a straightedge to extend the sides to form two intersecting lines.



Draw 2 vertical \angle 's
that measure 125° .



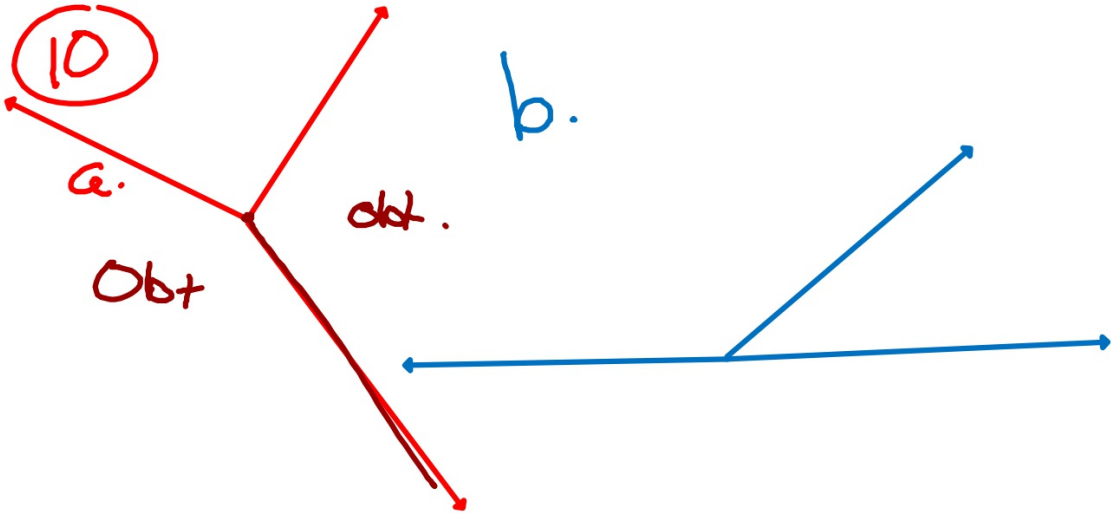
10

a.

Obt

obt.

b.



Homework

Due