

Do Now:

Solve each equation:

1. $2(50 + 4a) = 130$

2. $\frac{1}{3}m - 110 = 20$

3. $3(60 + y) - 4y = 135$

4. $\frac{2}{3}(x - 9) = 6$

Geometry

Ch. 1 Handout 1.6

Measuring Angles

An angle ($\angle$) is formed by two rays with the same endpoints.

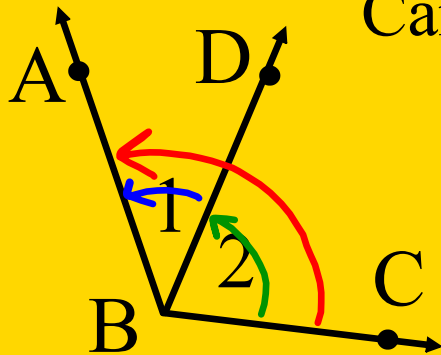
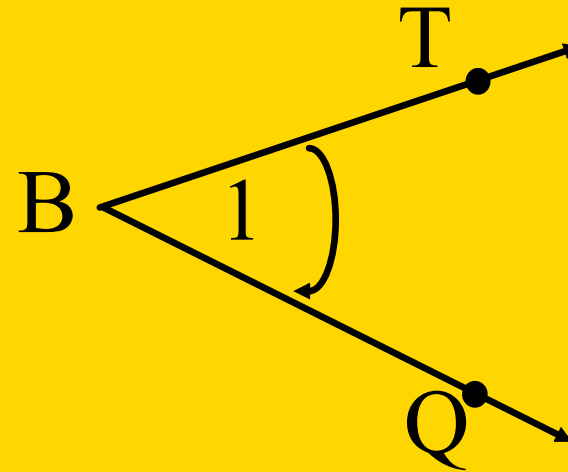
Name the angle at the right.

$\angle TBQ$

$\angle QBT$

$\angle 1$

$\angle B$



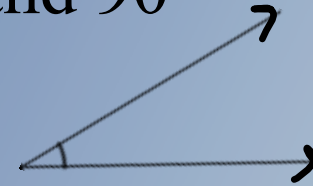
Can you name the $\angle ABC$ at the left as $\angle B$? $\angle 1$? $\angle 2$?

No, No, No

Acute Angle has

Pull

a measurement
between 0 and 90
degrees

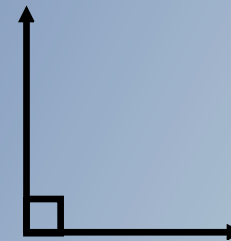


$$0 < x < 90$$

Right Angle has

Pull

a measurement of exactly
90 degrees



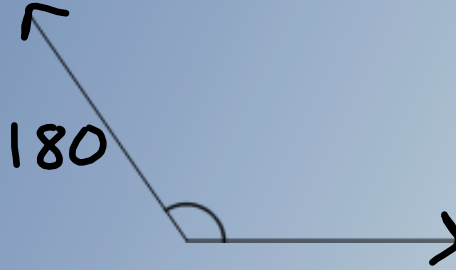
$$x = 90^\circ$$

Obtuse Angle has

Pull

a measurement between
90 and 180 degrees

$$90 < x < 180$$



Straight Angle has

Pull

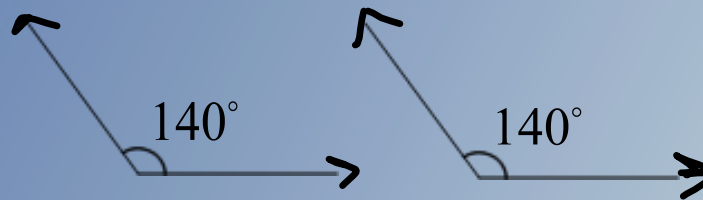
a measurement of exactly
180 degrees.

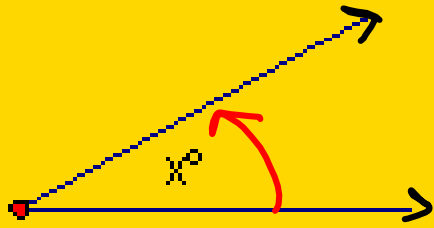


Congruent ($\cong$) Angle has

Pull

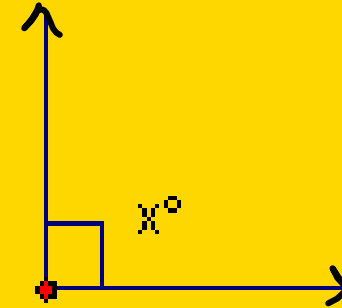
are two angles with the same measurement





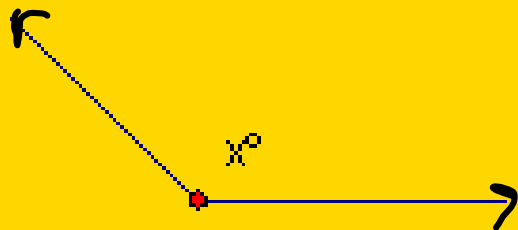
Acute angle

$$0 < x < \underline{90}$$



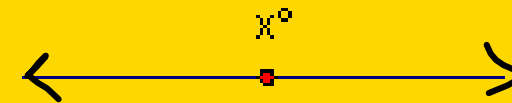
Right angle

$$x = \underline{90^\circ}$$



Obtuse angle

$$\underline{90} < x < \underline{180}$$

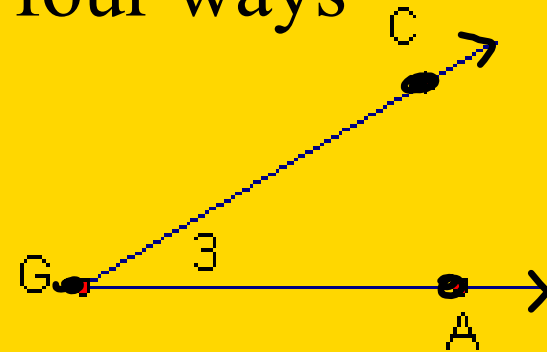


Straight angle

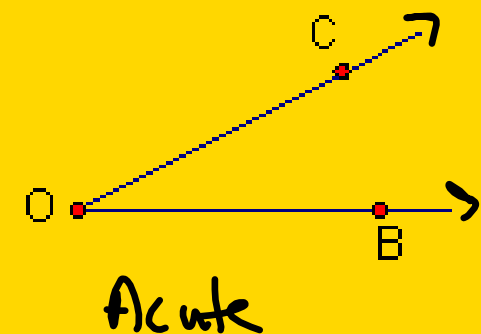
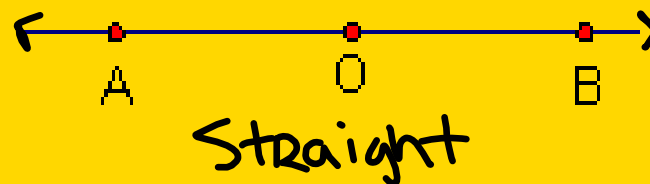
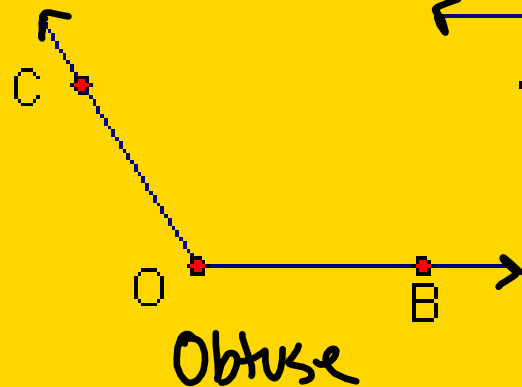
$$x = \underline{180^\circ}$$

1. Name the angle at the right in four ways

$\angle G$, $\angle CGA$
 $\angle AGC$, $\angle 3$



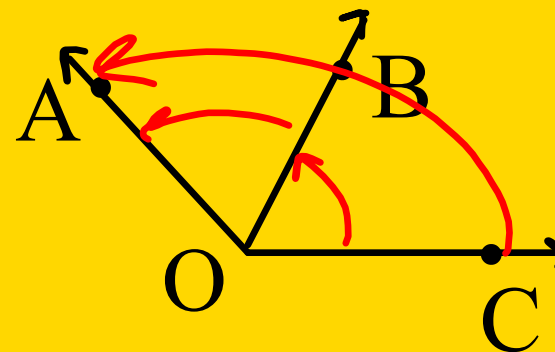
2. Classify each as acute, right, obtuse, and straight.



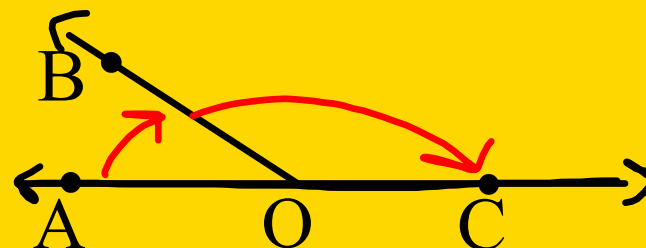
Angle Addition Postulate

If point B is in the interior of $\angle AOC$, then

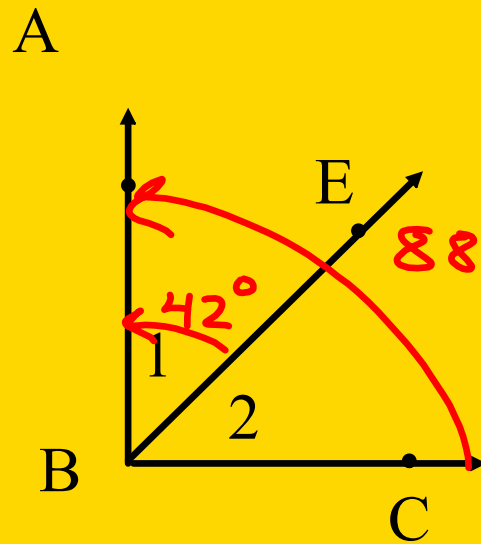
$$m\angle \underline{COB} + m\angle \underline{BOA} = m\angle AOC.$$



If $\angle AOC$ is a straight angle, then $m\angle AOB + m\angle BOC = \underline{180^\circ}$



3. Suppose that $m\angle 1 = 42$ and $m\angle ABC = 88$.
Find $m\angle 2$. (Use angle addition postulate)



$$\begin{aligned} m\angle 2 + m\angle 1 &= m\angle ABC \\ m\angle 2 + 42^\circ &= 88^\circ \\ -42 &\quad -42 \end{aligned}$$

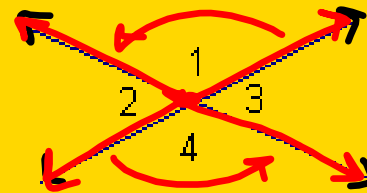
$$m\angle 2 = 46^\circ$$

Angle Pairs

Vertical angles- two angles whose sides are opposite rays (look for intersecting lines)

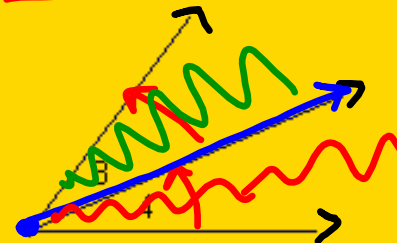
$\angle 1$ is vert. $\angle 4$

$\angle 2$ is vert. $\angle 3$



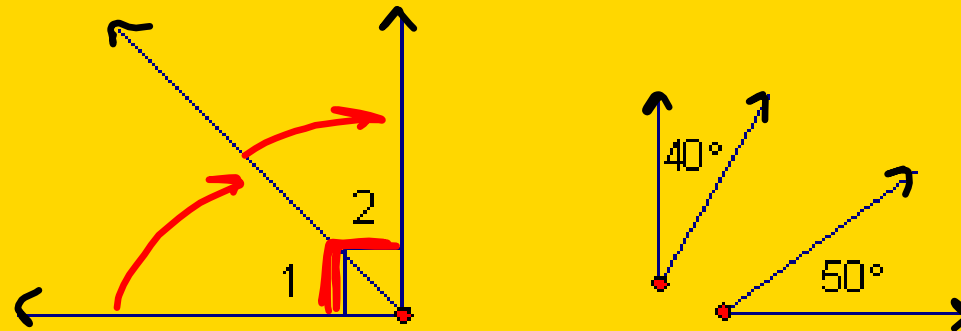
Adjacent angles - two coplanar angles with a common side, a common vertex, and no common interior points

$\angle 3$ adj. to $\angle 4$

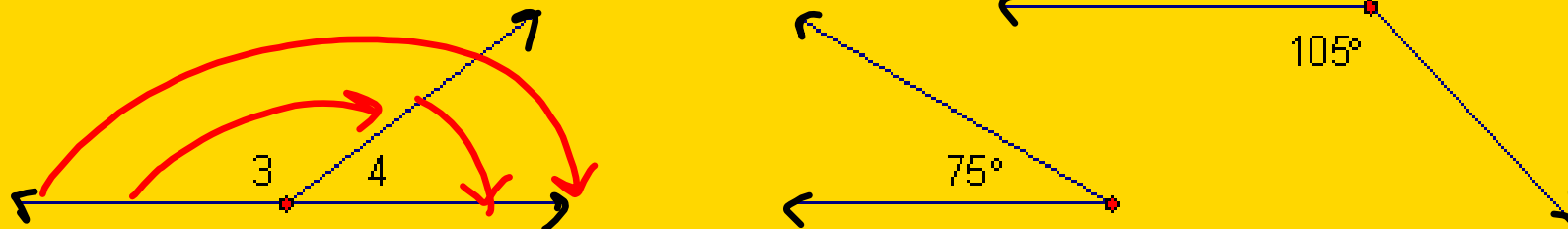


Complementary angles - two angles whose measures have sum 90.
 -- each angle is called the *complement* of the other

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



Supplementary angles - two angles whose measure have sum 180
 -- each angle is called the *supplement* of the other.



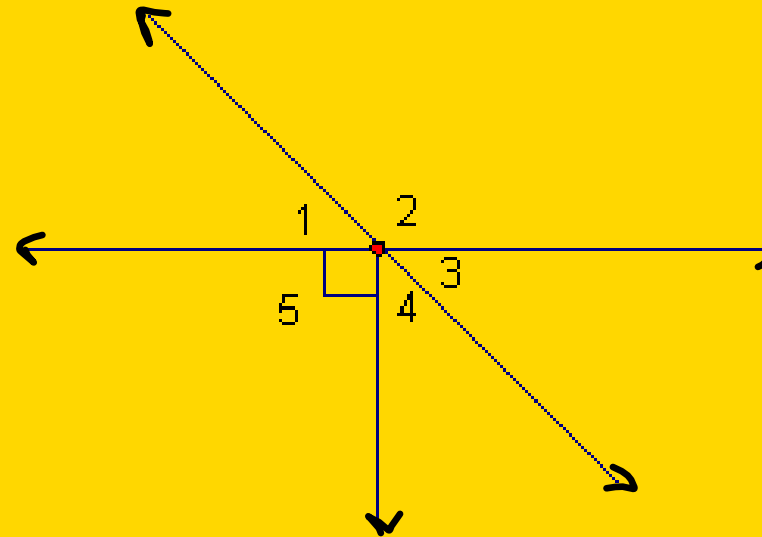
4. In the diagram identify pairs of numbered angles that are related as follows:

a) complementary:

b) supplementary:

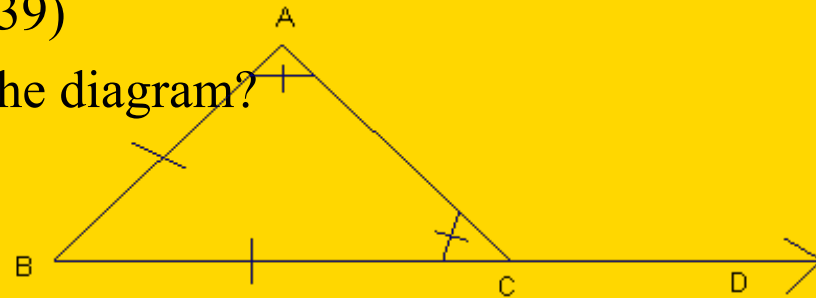
c) vertical angles:

d) adjacent angles:



Making conclusions from a diagram (pg 39)

5. Can you make each conclusion from the diagram?



a) $\angle A \cong \angle C$

b) $\angle B$ and $\angle ACD$ are supplementary

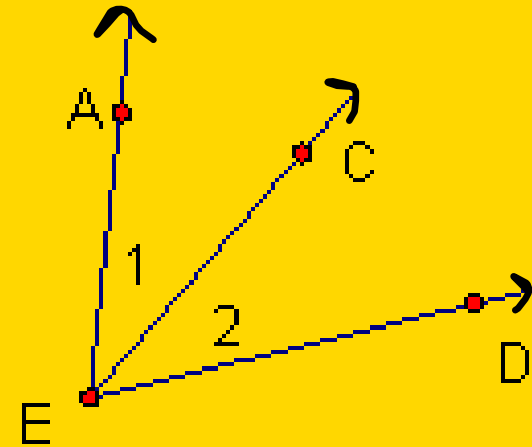
c) $m\angle BCA + m\angle DCA = 180$

d) $\overline{AB} \cong \overline{BC}$

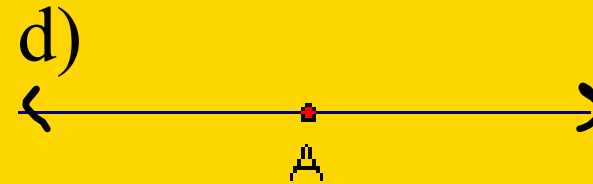
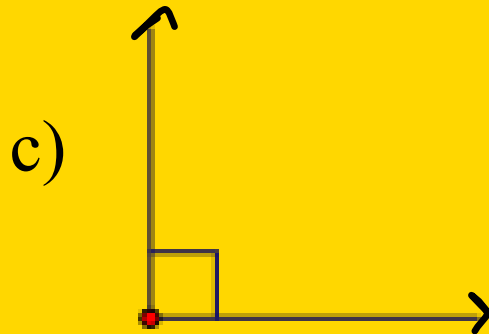
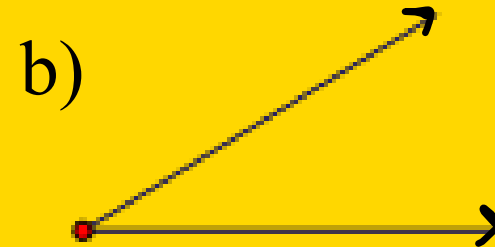
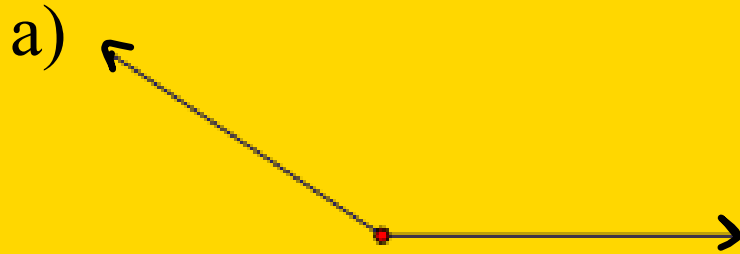
6. Use the diagram at the right.

a) Name $\angle CED$ two other ways.

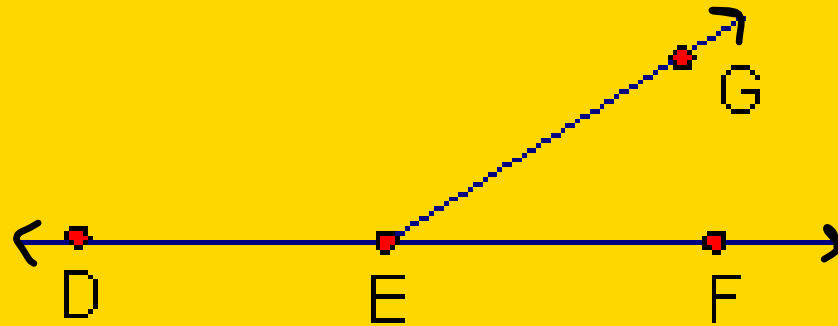
b) Would it be correct to name any of the angles $\angle E$? Explain.



7. Classify each angle as acute, right, obtuse, or straight:



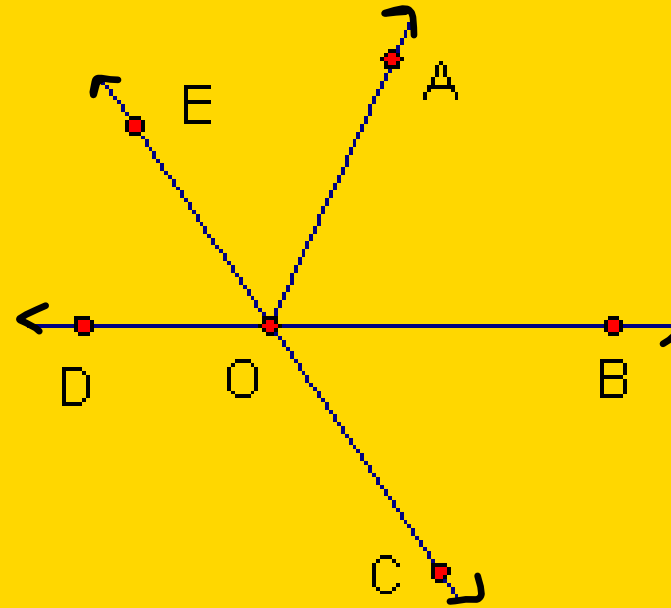
8. If $m\angle DEG = 145$, find $m\angle GEF$.



9. Name an angle or angles in the diagram supplementary to each of the follow

a) $\angle DOA$

b) $\angle EOB$

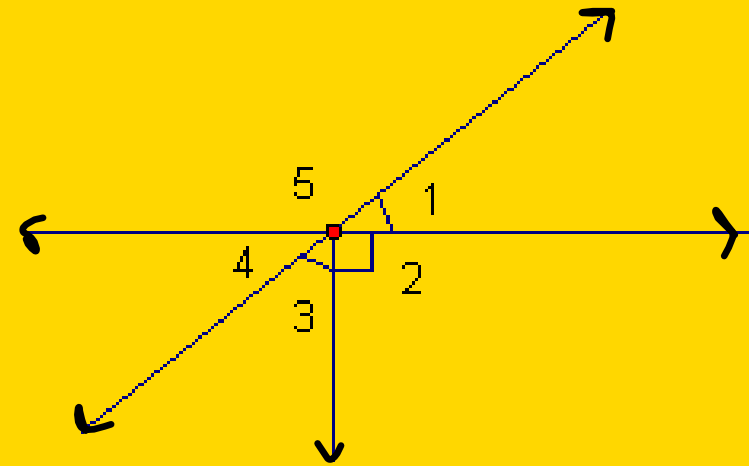


10. Can you make each conclusion from the information in the diagram? Explain.

a) $\angle 1 \cong \angle 3$

b) $\angle 4$ and $\angle 5$ are supplementary

c) $m\angle 1 + m\angle 5 = 180$



11. Give the complementary and supplementary measure to each angle.

a) $m\angle A = 30$

b) $m\angle A = 42$

c) $m\angle A = 95$

d) $m\angle 150$

Assignment

Day 1: Pgs 40-42 1-14,35-40,42-45



