

4-18-17

Aim: SWBAT name and identify vertical, adjacent, complementary, and supplementary angles.

Do Now:

HW: Pg. 406 - 407 # 1-9, 14-15, 21 - 23

### Basic Geometric Figures

Draw a picture. Write the symbol.

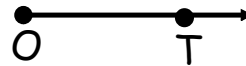
1. Draw segment AB.



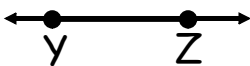
2. Draw point X.



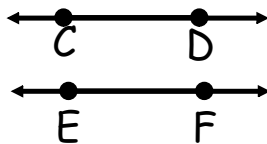
\* 3. Draw ray OT.



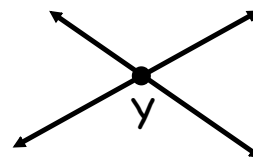
4. Draw line YZ.



5. Draw lines CD and EF that are parallel.

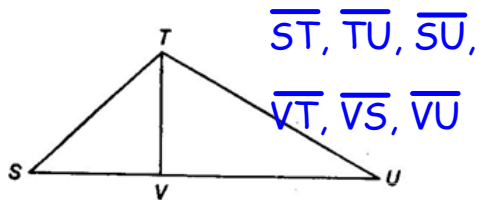


6. Draw two lines that intersect at point Y.

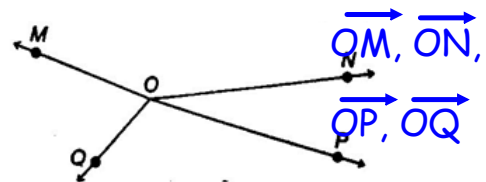


Use the figures to find the answers.

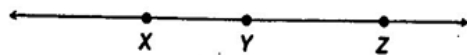
7. Name the six segments shown in the picture.



\* 8. Name the four rays shown in the figure.



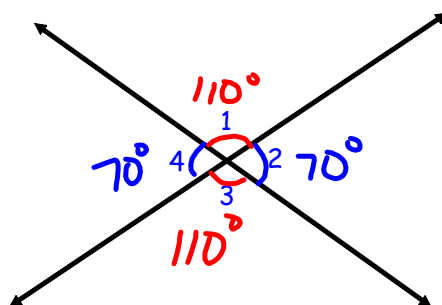
9. Use the three points to name three different segments.



$\overline{XY}, \overline{YZ}, \overline{XZ}$

10. Which two lines appear to be parallel?





Name four pairs of adjacent angles.

$\angle 1$  and  $\angle 2$   
 $\angle 2$  and  $\angle 3$   
 $\angle 3$  and  $\angle 4$   
 $\angle 4$  and  $\angle 1$

Name two pairs of vertical angles.

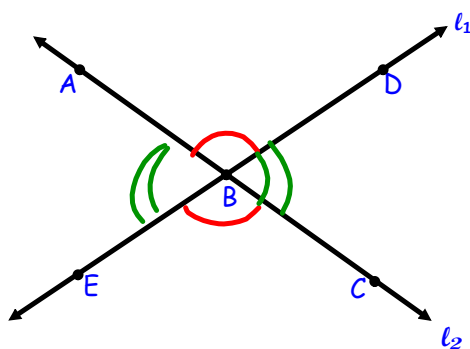
$\angle 1$  and  $\angle 3$   
 $\angle 2$  and  $\angle 4$

### Adjacent Angles

- Common ray
- Common vertex
- Do not overlap

### Vertical Angles

- Opposite each other
- Always congruent ( )



Given:

$l_1$  intersects  $l_2$

Name four pairs of adjacent angles.

$\angle ABD$  and  $\angle DBC$   
 $\angle DBC$  and  $\angle CBE$   
 $\angle CBE$  and  $\angle EBA$   
 $\angle EBA$  and  $\angle ABD$

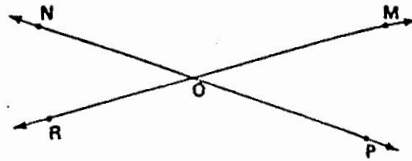
Name two pairs of vertical angles.

$\angle ABD$  and  $\angle EBC$   
 $\angle ABE$  and  $\angle DBC$

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A. Name the adjacent angles in the figure at the right.

- $\angle$  NOM and  $\angle$  MOP are adjacent.
- $\angle$  MOP and  $\angle$  POR are adjacent.
- $\angle$  POR and  $\angle$  RON are adjacent.
- $\angle$  RON and  $\angle$  NOM are adjacent.

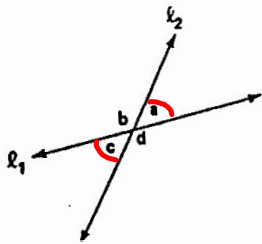


B. Find the complement and the supplement for each given angle.

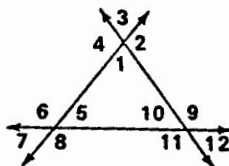
Given angle	Complementary angle <i>sum to 90°</i>	Supplementary angle <i>sum 180°</i>	Given angle	Complementary angle <i>9</i>	Supplementary angle <i>8</i>
$\angle AOB = 30^\circ$	$60^\circ$	$150^\circ$	$\angle BOC = 47^\circ$	$43^\circ$	$133^\circ$
$\angle TOP = 18^\circ$	$72^\circ$	$162^\circ$	$\angle OXT = 13^\circ$	$77^\circ$	$167^\circ$
$\angle ABC = 89^\circ$	$1^\circ$	$91^\circ$	$\angle AVF = 73^\circ$	$17^\circ$	$107^\circ$
$\angle PRS = 63^\circ$	$27^\circ$	$117^\circ$	$\angle SPL = 35^\circ$	$55^\circ$	$145^\circ$
$\angle SOM = 80^\circ$	$10^\circ$	$100^\circ$	$\angle MNO = 84^\circ$	$6^\circ$	$96^\circ$
$\angle STN = 57^\circ$	$33^\circ$	$123^\circ$	$\angle TNR = 55^\circ$	$35^\circ$	$125^\circ$

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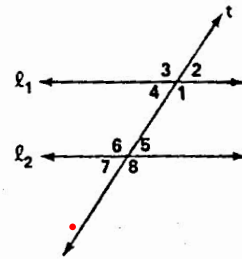
List all the vertical angles in each figure.



- $\angle$  a and  $\angle$  c
- $\angle$  b and  $\angle$  d

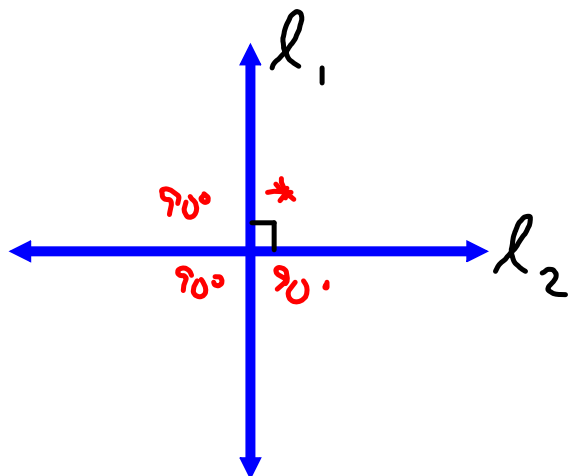


- $\angle$  1 and  $\angle$  3
- $\angle$  2 and  $\angle$  4
- $\angle$  5 and  $\angle$  7
- $\angle$  6 and  $\angle$  8
- $\angle$  9 and  $\angle$  11
- $\angle$  10 and  $\angle$  12



- $\angle$  1 and  $\angle$  3
- $\angle$  2 and  $\angle$  4
- $\angle$  5 and  $\angle$  7
- $\angle$  6 and  $\angle$  8

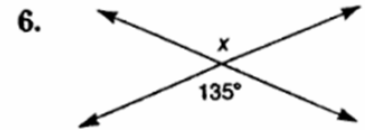
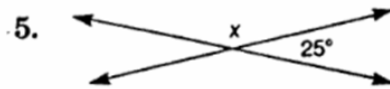
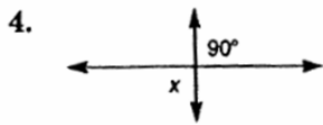
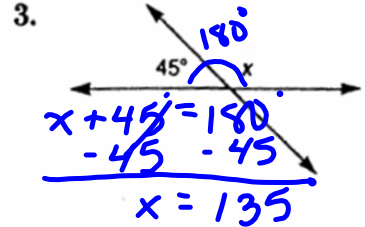
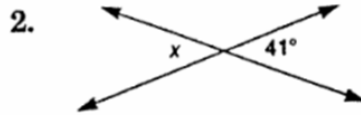
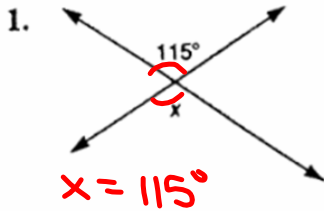
If two lines intersect and form a right angle ( $90^\circ$ ), then the lines are said to be **perpendicular** ( $\perp$ ).



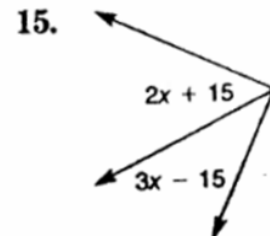
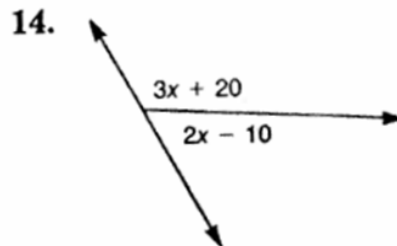
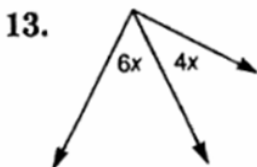
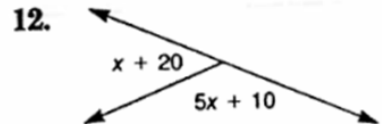
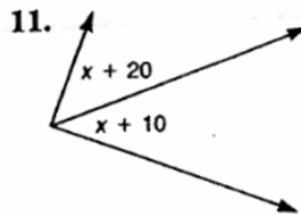
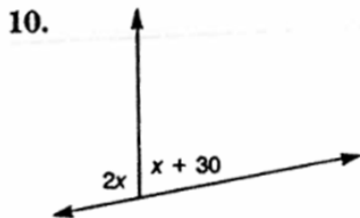
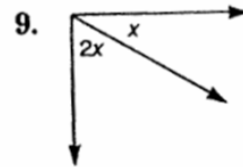
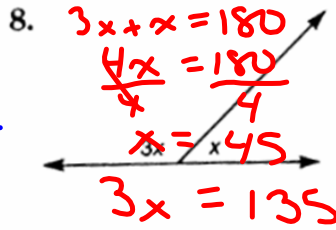
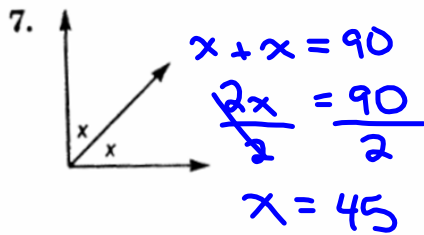
$$l_1 \perp l_2$$

### Angle Relationships

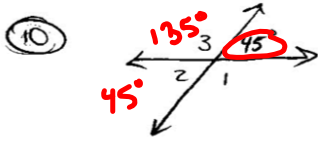
Find the value of  $x$  in each figure.



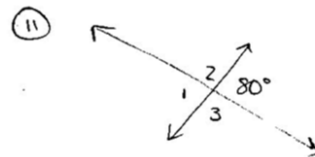
Each of the following pairs of angles is either complementary or supplementary. Find the measure of each angle.



Pg. 406  
Find the missing angles. Justify your reasoning.



- $\angle 1 = 135^\circ$  because it is supp. to the given angle.
- $\angle 2 = 45^\circ$  because vertical angles are always  $\cong$
- $\angle 3 = 135^\circ$  because it is supp. to the given angle.



- $\angle 1 = 80^\circ$  because vertical  $\angle$ 's are always  $\cong$ .
- $\angle 2 = 100^\circ$  because it's supp. to the given angle.
- $\angle 3 = 100^\circ$  because it's supp. to the given angle.