1. Which pairs of angles form vertical angles? $\angle 7$ and $\angle 9$, $\angle 8$ and $\angle 6$	
2. Which pairs of angles form a linear pair? $\angle 7$ and , $\angle 6$ or $\angle 8$ $\angle 8$ and $\angle 7$ or $\angle 9$	
3. Complete the equation: $m\angle 8 + m\angle 7 \; (or\; m\angle 9) = 180°$	
4. Complete the equation: $m\angle 9 = m\angle 7$	

For each diagram, a) write an equation that uses the information about the labeled angles, b) solve for the variable.

5. $110°$ $(2x + 40)°$ $x = 35$	6. $x°$ $(5x - 48)°$ $x = 12$	7. $75°$ $(2x - 5)°$ $x = 55$
8. $(3x + 8)°$ $x°$ $x = 43$	9. $64°$ $(48 + x)°$ $x = 16$	10. $(2x + 8)°$ $(3x + 17)°$ $x = 31$

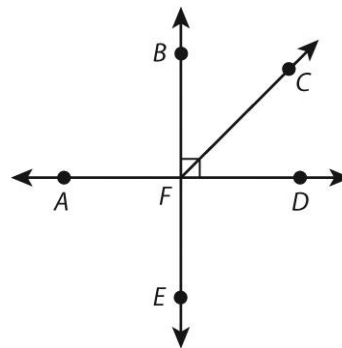**Use the figure to answer the following.**

11. Name two complementary angles.

$\angle BFC \; and \; \angle CFD$

12. Name two supplementary angles.

$\angle BFA \; and \; \angle AFE$ (one example)

13. If $m\angle AFC = 150°$, what is $m\angle CFD$? **30°**

14. $\angle PQR$ and $\angle SQR$ form a linear pair. Find the sum of their measures. 180°

15. Name the ray that $\angle PQR$ and $\angle SQR$ share. $\overrightarrow{QR}$

Use the figures for Problems 16–21.

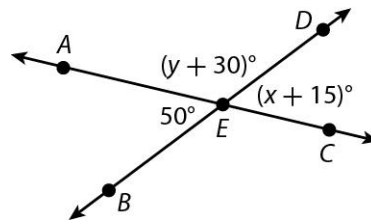16. Give the supplement of ∠AEB **130°**

17. Give the complement of ∠AEB **40°**

Figure (top right): Lines through point E. Point A upper left, D upper right, B lower left, C lower right. Angles labeled $(y + 30)°$, $(x + 15)°$, and $50°$ at E.

19. $x = $ **35**   19. $y = $ **100**

20. m∠DEC = **50°**   21. m∠AED = **130°**

Find $m\angle 1$ and $m\angle 2$. Explain your reasoning.

22.	23.	24.
118° with angles 1, 2	72° with angles 2, 1	127° with angles 1, 2
$m\angle 1 = $ **118** ° because	$m\angle 1 = $ **72°** because	$m\angle 1 = $ **127°** because
$m\angle 2 = $ **118°** because	$m\angle 2 = $ **108°** because	$m\angle 2 = $ **127°** because

Find the measures of x and y. Explain your reasoning.

27.

25.   26.

25. 81°, $x°$, $y°$

26. 98°, $x°$, $y°$

27. right angle, $x°$, $y°$
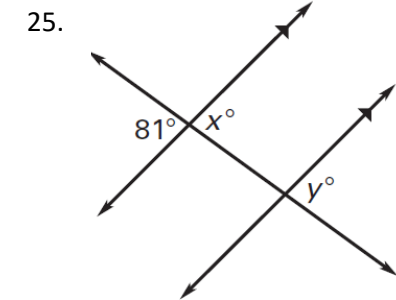
$x = $ **81°** because $x = $ **82°** because $x = $ **90°** because
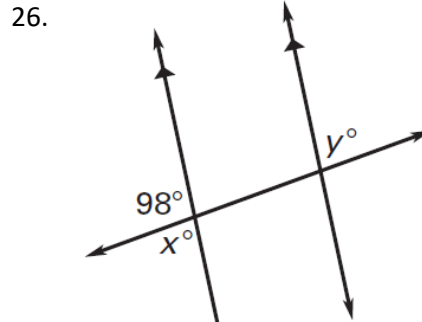
$y = $ **81°** because $y = $ **82°** because $y = $ **90°** because
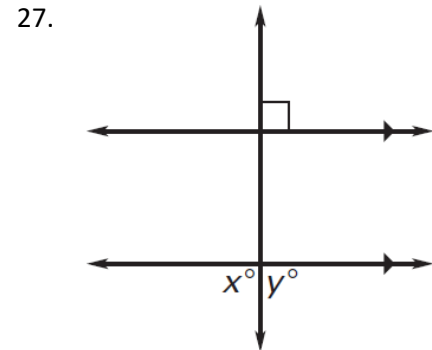
Which postulate or theorem relates the labeled angles? Find the measure of x. Show your work clearly.

28.	29.	30.
80°, $(5x - 15)°$	$3(x + 9)°$, $129°$	$75°$, $(4x - 9)°$
$x = $ **19**	$x = $ **34**	$x = $ **28.5**
Postulate or Theorem:	Postulate or Theorem:	Postulate or Theorem: