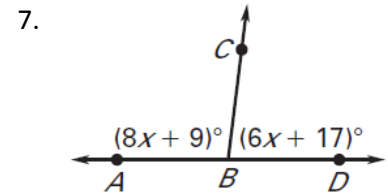
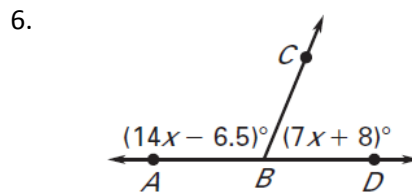
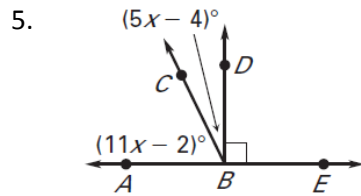


$\angle 1$ and $\angle 2$ are complementary angles and $\angle 2$ and $\angle 3$ are supplementary angles. Given the measure of $\angle 1$, find $m\angle 2$ and $m\angle 3$.

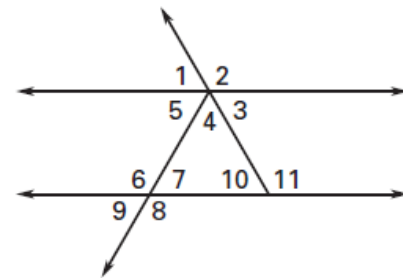
1. $m\angle 1 = 43^\circ$ 2. $m\angle 1 = 28^\circ$ 3. $m\angle 1 = 69.5^\circ$ 4. $m\angle 1 = 17.5^\circ$

For exercises 5-7, find $m\angle ABC$ and $m\angle CBD$.



8. Tell whether the angles are vertical angles, a linear pair, or neither.

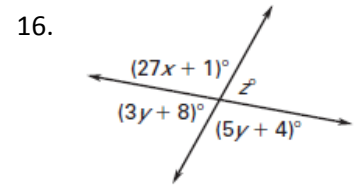
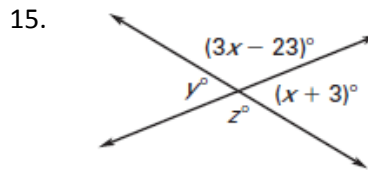
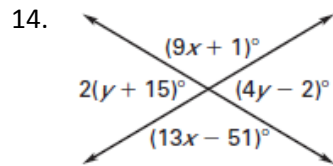
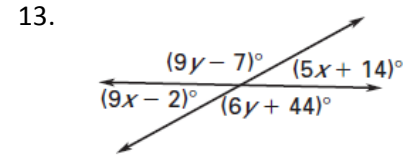
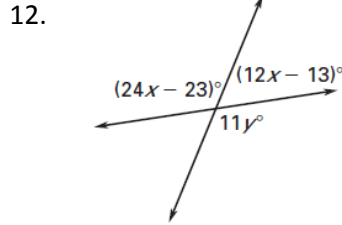
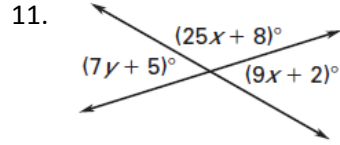
- | | |
|-------------------------------|--------------------------------|
| a. $\angle 1$ and $\angle 2$ | b. $\angle 1$ and $\angle 3$ |
| c. $\angle 2$ and $\angle 4$ | d. $\angle 4$ and $\angle 5$ |
| e. $\angle 6$ and $\angle 8$ | f. $\angle 8$ and $\angle 9$ |
| g. $\angle 7$ and $\angle 10$ | h. $\angle 10$ and $\angle 11$ |



9. Two angles form a linear pair. The measure of one angle is 15 times the measure of the other angle. Find the measure of each angle.

10. Two angles are supplementary. The measure of one of the angles is 10 more than three times the other. Find the measure of each angle.

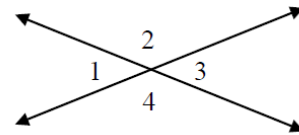
For exercises 11 – 16, find the values of all variables.



17. In the diagram, $m\angle 2 = \left(\frac{2}{5}x + 20\right)^\circ$ and $m\angle 4 = \left(\frac{1}{2}x + 12\right)^\circ$.

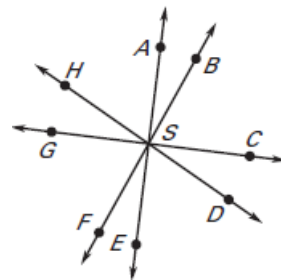
Find $m\angle 1$, $m\angle 2$, $m\angle 3$, and $m\angle 4$.

(NOTE : Diagram not drawn to scale)

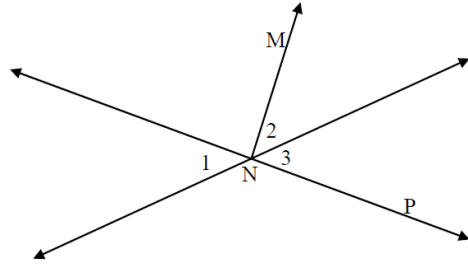


18. In the diagram, \overleftrightarrow{AE} intersects with \overleftrightarrow{CG} at a 90° angle. The $m\angle ASD = 118^\circ$ and $m\angle HSB = 96^\circ$. Find the indicated angle measure.

- | | |
|-----------------------|-----------------------|
| a. Find $m\angle HSE$ | b. Find $m\angle FSD$ |
| c. Find $m\angle BSD$ | d. Find $m\angle DSE$ |
| e. $m\angle CSD$ | f. Find $m\angle GSF$ |



19. In the diagram below, $\angle 2$ and $\angle 3$ are complementary angles, $m\angle 1 = 3x - 8y$, $m\angle 2 = 3x - 2y$, and $m\angle 3 = 6x + 2y$. Find $m\angle 1$, $m\angle 2$ and $m\angle 3$.



$\angle A$ and $\angle B$ are complementary angles. Find $m\angle A$ and $m\angle B$.

20. $m\angle A = (4x + 31)^\circ$
 $m\angle B = (-2x + 44)^\circ$

21. $m\angle A = (x^2 + 60)^\circ$
 $m\angle B = (10x + 55)^\circ$

$\angle R$ and $\angle S$ are supplementary angles. Find $m\angle R$ and $m\angle S$.

22. $m\angle R = (9x - 12)^\circ$
 $m\angle S = (24x + 60)^\circ$

23. $m\angle R = (9x + 28.5)^\circ$
 $m\angle S = (-5x + 101.5)^\circ$

24. $\angle E$ and $\angle F$ are complementary angles. $\angle J$ and $\angle K$ are supplementary angles. Find the measures of the four angles if $m\angle E = 4x^\circ$, $m\angle F = 5y^\circ$, $m\angle J = (8x + 5)^\circ$, and $m\angle K = (7y + 19)^\circ$.

Answer Key :

1. $m\angle 2 = 47^\circ, m\angle 3 = 133^\circ$

2. $m\angle 2 = 62^\circ, m\angle 3 = 118^\circ$

3. $m\angle 2 = 20.5^\circ, m\angle 3 = 159.5^\circ$

4. $m\angle 2 = 72.5^\circ, m\angle 3 = 107.5^\circ$

5. $m\angle ABC = 64^\circ, m\angle CBD = 26^\circ$

6. $m\angle ABC = 97^\circ, m\angle CBD = 83^\circ$

7. $m\angle ABC = 112.5^\circ, m\angle CBD = 67.5^\circ$

8. a) Linear Pair , b) Vertical Angles , c) Neither , d) Neither , e) Vertical Angles , f) Linear Pair

g) Neither , h) Linear Pair

9. $11.25^\circ, 168.75^\circ$

10. $42.5^\circ, 137.5^\circ$

11. $x = 5, y = 6$

12. $x = 6, y = 11$

13. $x = 4, y = 17$

14. $x = 13, y = 16$

15. $x = 50, y = 53, z = 127$

16. $x = 4, y = 21, z = 71$

17. $x = 80, m\angle 1 = 128^\circ, m\angle 2 = 52^\circ, m\angle 3 = 128^\circ, m\angle 4 = 52^\circ$

18. a) 118° , b) 96° , c) 84° , d) 62° , e) 28° , f) 56°

19. $x = 10, y = -3, m\angle 1 = 54^\circ, m\angle 2 = 36^\circ, m\angle 3 = 54^\circ$

20. $m\angle A = 61^\circ, m\angle B = 29^\circ$

21. $m\angle A = 85^\circ, m\angle B = 5^\circ$

22. $m\angle R = 24^\circ, m\angle S = 156^\circ$

23. $m\angle A = 141^\circ, m\angle B = 39^\circ$

24. $m\angle E = 50^\circ, m\angle F = 40^\circ, m\angle J = 105^\circ, m\angle K = 75^\circ$