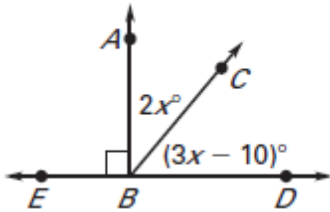
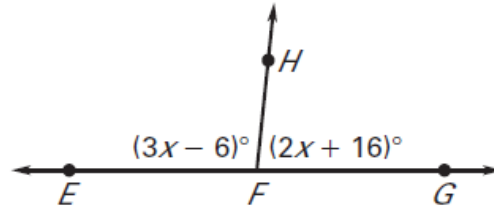


1. Find $m\angle ABC$ and $m\angle CBD$.



2. Find $m\angle EFH$ and $m\angle HFG$.



3. The measure of one angle is three times the measure of its complement. Find the measure of each angle.

4. An angle is 24 degrees less than twice the measure of its supplement. Find the measure of each angle.

5. The supplement of an angle is 6 more than 8 times the complement of the angle. Find the measure of each angle.

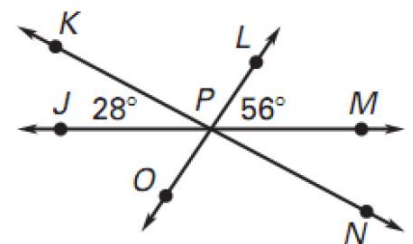
6. Use the diagram to the right :

a. Find $m\angle KPL$ _____

b. Find $m\angle LPN$ _____

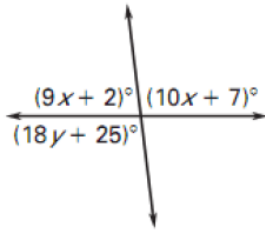
c. Find $m\angle MPN$ _____

d. Find $m\angle MPO$ _____

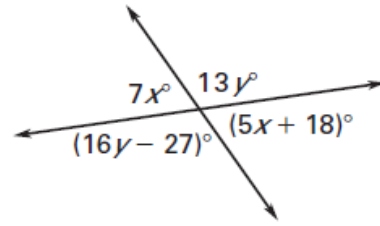


Solve for x and y.

7.

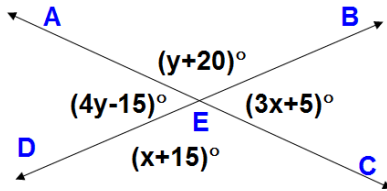


8.

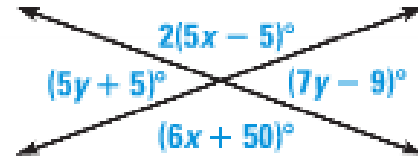


Please find the values of x and y and then find all angle measures.

9.



10.

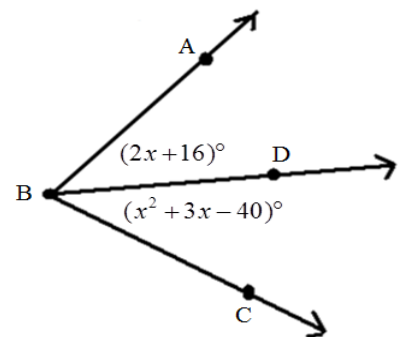


11. Point B is in the interior of $\angle CAT$. If $m\angle CAB = (3x - 16)^\circ$, $m\angle BAT = (7x - 8)^\circ$, and $m\angle CAT = (3x + 60)^\circ$, please find the measures of all three angles.

12. $\angle A$ and $\angle B$ are complementary angles. If $m\angle A = (2x^2 + 35)^\circ$ and $m\angle B = (x + 10)^\circ$, then what are the possible measures of both angles?

13. Given that $\angle A$ and $\angle B$ are supplementary angles, and $m\angle A = \left(\frac{3}{8}x + 50\right)^\circ$ and $m\angle B = (x + 31)^\circ$ find $m\angle A$ and $m\angle B$.

14. \overrightarrow{BD} bisects $\angle ABC$. Please find $m\angle ABD$, $m\angle DBC$, and $m\angle ABC$.



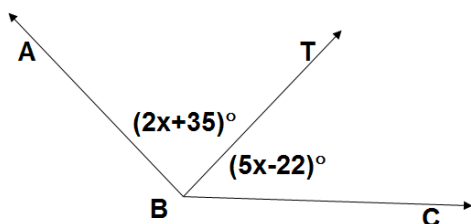
15. Let Q be in the interior of $\angle POR$. Use the angle addition postulate to solve for x and find the measure of each angle.

$$m\angle POQ = (x + 4)^\circ$$

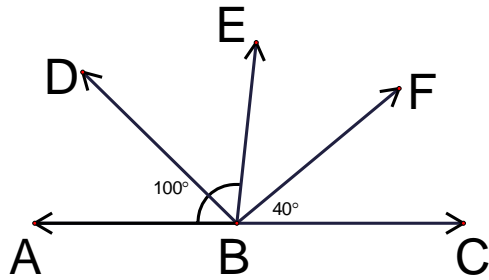
$$m\angle QOR = (2x - 2)^\circ$$

$$m\angle POR = 26^\circ$$

16. Given \overrightarrow{BT} bisects $\angle ABC$. Find the value of x.

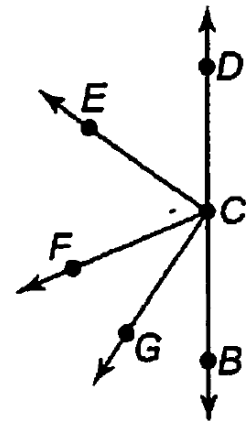


17. \overrightarrow{BD} bisects $\angle ABE$ and \overrightarrow{BF} bisects $\angle EBC$. Please find $m\angle DBF$.



18. $\angle 1$ is supplementary to $\angle 2$ and $\angle 2$ is supplementary to $\angle 3$. If $m\angle 1 = (5x - 48)^\circ$ and $m\angle 3 = (2x + 30)^\circ$. Please find $m\angle 2$.

19. If \overrightarrow{CG} bisects $\angle FCB$, $m\angle FCB = (18x + 6)^\circ$ and $m\angle GCB = (13x - 9)^\circ$, find $m\angle GCF$.

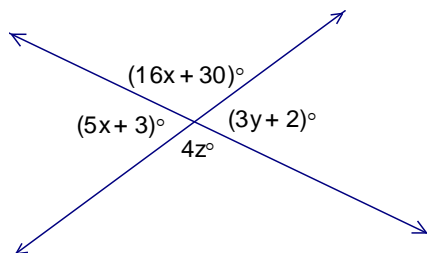


20. If $m\angle K$ and $m\angle J$ are supplementary, and $m\angle K$ is 5 more than 6 times the $m\angle J$, then $m\angle K = \underline{\hspace{2cm}}$.

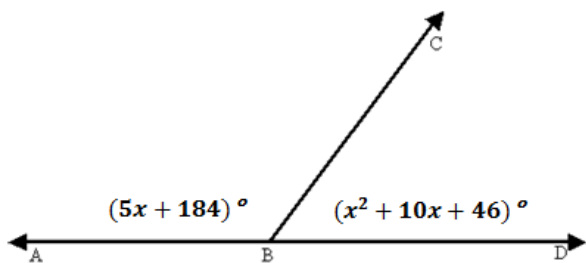
21. $\angle 1$ and $\angle 2$ are supplementary angles. $\angle 1$ and $\angle 3$ are vertical angles. If $m\angle 2 = 72^\circ$, what is $m\angle 3$?

22. $\angle A$ and $\angle B$ are complementary angles. $\angle C$ and $\angle D$ are supplementary angles. Find the measures of the four angles, if $m\angle A = 2x^\circ$, $m\angle B = 6y^\circ$, $m\angle C = (6x + y)^\circ$, and $m\angle D = (4x + 2y)^\circ$.

23. Find the values of x , y , and z , and then find the measure of each angle in the diagram below.



24. Given the diagram to the right, what are the possible measures of both angles?



Answer Key

1. $x = 20$, $m\angle ABC = 40^\circ$, $m\angle CBD = 50^\circ$
2. $x = 34$, $m\angle EFH = 96^\circ$, $m\angle HFG = 84^\circ$
3. 67.5° , 22.5°
4. 112° , 68°
5. One angle: 78° , Complement: 12° , Supplement: 102°
6. a) 96° b) 84° c) 28° d) 124°
7. $x = 9$, $y = 4$
8. $x = 9$, $y = 9$
9. $x = 40$, $y = 35$, angles: $55^\circ, 125^\circ, 55^\circ, 125^\circ$
10. $x = 15$, $y = 7$, angles: $40^\circ, 140^\circ, 40^\circ, 140^\circ$
11. $x = 12$, $m\angle CAB = 20^\circ$, $m\angle BAT = 76^\circ$, $m\angle CAT = 96^\circ$
12. $x = 4.5$: $m\angle A = 75.5^\circ$ and $m\angle B = 14.5^\circ$ OR $x = -5$: $m\angle A = 85^\circ$ and $m\angle B = 5^\circ$
13. $x = 72$, $m\angle A = 77^\circ$, $m\angle B = 103^\circ$
14. $x = 7$, $m\angle ABD = 30^\circ$, $m\angle DBC = 30^\circ$, $m\angle ABC = 60^\circ$
15. $x = 8$, $m\angle POQ = 12^\circ$, $m\angle QOR = 14^\circ$
16. $x = 19$
17. $m\angle DBF = 90^\circ$
18. $m\angle 2 = 98^\circ$
19. $x = 3$, $m\angle GCF = 30^\circ$
20. $m\angle K = 155^\circ$
21. $m\angle 3 = 108^\circ$
22. $x = 15$, $y = 10$, $m\angle A = 30^\circ$, $m\angle B = 60^\circ$, $m\angle C = 100^\circ$, $m\angle D = 80^\circ$
23. $x = 7$, $y = 12$, $z = 35.5$, angles: $38^\circ, 142^\circ, 38^\circ, 142^\circ$
24. $x = -10$: $m\angle ABC = 134^\circ$, $m\angle CBD = 46^\circ$ OR $x = -5$: $m\angle ABC = 159^\circ$, $m\angle CBD = 21^\circ$