

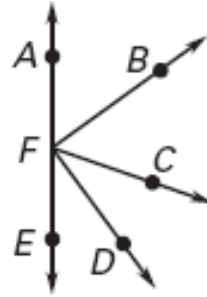
Using the diagram below, classify each angle as *acute*, *obtuse*, *right*, or *straight*.

1. $\angle AFB$

2. $\angle BFD$

3. $\angle AFC$

4. $\angle AFE$



Give as many other names as possible for the angle in the diagram. Tell whether the angle appears to be *acute*, *obtuse*, *right*, or *straight*.

5. $\angle HGM$

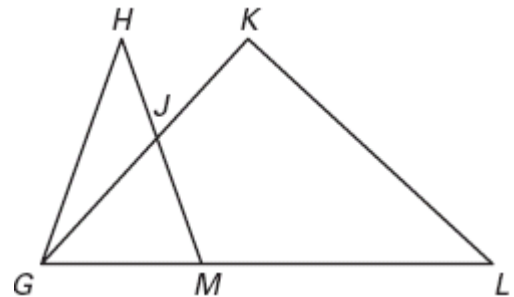
6. $\angle KLG$

7. $\angle KJM$

8. $\angle JKL$

9. $\angle HML$

10. $\angle GJK$

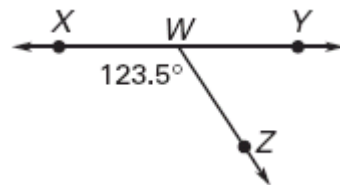
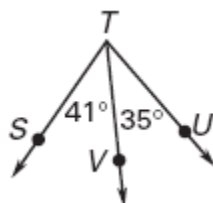
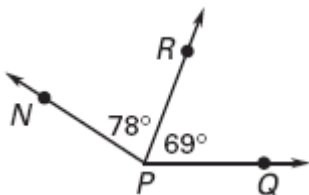


Find the indicated angle measure.

11. $m\angle NPQ = \underline{\quad? \quad}$

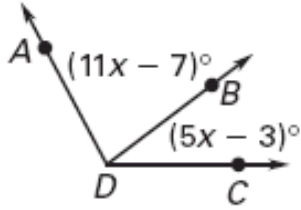
12. $m\angle STU = \underline{\quad? \quad}$

13. $m\angle YWZ = \underline{\quad? \quad}$

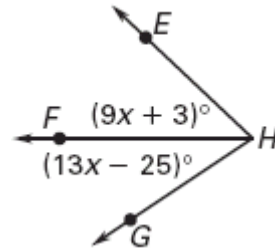


Use the given information to find the indicated angle measure.

14. Given $m\angle ADC = 118^\circ$, find $\angle ADB$.

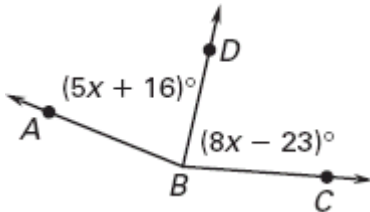


15. Given $m\angle EHG = 77^\circ$, find $m\angle FHG$.

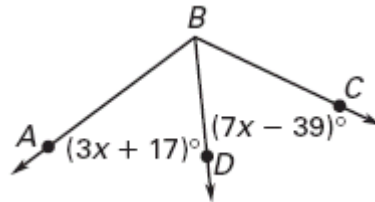


In each diagram, \overrightarrow{BD} bisects $\angle ABC$. Find $m\angle ABC$.

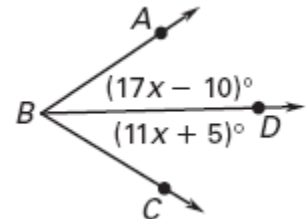
16.



17.



18.



19. Given that \overrightarrow{BD} bisects $\angle ABC$, $m\angle ABD = \left(\frac{1}{2}y + 10\right)^\circ$, and $m\angle DBC = (y + 4)^\circ$. Find $m\angle ABC$.

20. Given that \overrightarrow{AD} bisects $\angle BAC$, $m\angle BAD = (x^2 - 5x)^\circ$, and $m\angle DAC = (3x - 12)^\circ$. Find $m\angle BAD$ and $m\angle BAC$.

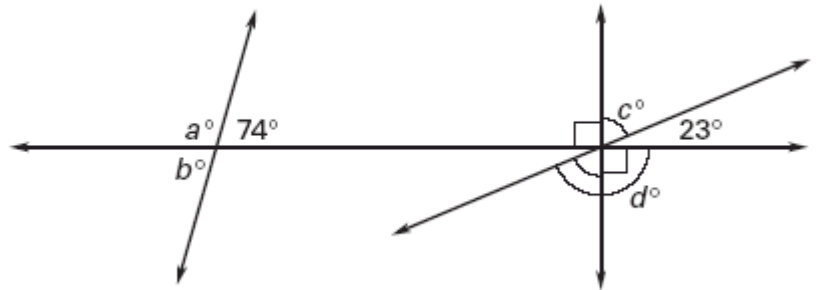
Find the indicated angle measure.

21. a°

22. b°

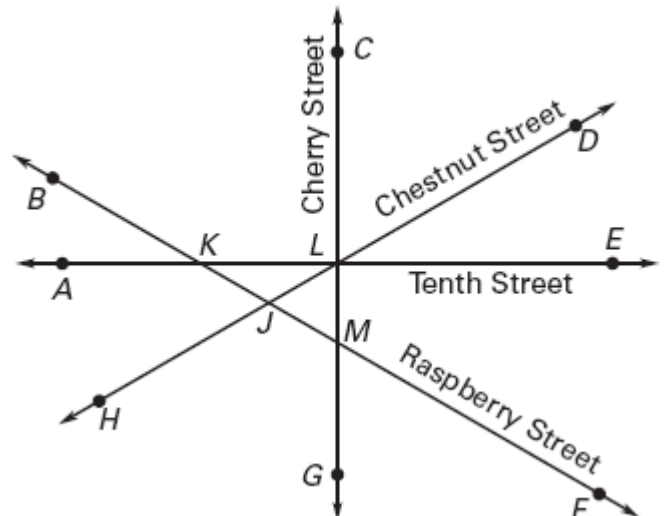
23. c°

24. d°



25. **Streets** The diagram shows four streets and their intersections. All streets are straight and \overrightarrow{CG} bisects $\angle ALE$.

- Which angles are acute? obtuse? right?
- Identify the congruent angles.
- If $m\angle DLE = 38^\circ$, $m\angle BKE = 153^\circ$, $m\angle BJH = 65^\circ$, and $m\angle CMF = 117^\circ$, find $m\angle CLD$, $m\angle EKF$, $m\angle FJH$, $m\angle FMG$, $m\angle DJF$, and $m\angle DLG$.



Answer Key

1. 54° ; acute
2. 90° ; right
3. 109° ; obtuse
4. 180° ; straight
5. $\angle MGH$, $\angle HGL$, and $\angle LGH$; acute
6. $\angle GLK$, $\angle KLM$, $\angle MLK$, and $\angle L$; acute
7. $\angle MJK$; obtuse
8. $\angle LKJ$, $\angle GKL$, $\angle LKG$, and $\angle K$; right
9. $\angle LMH$, $\angle JML$, and $\angle LMJ$; obtuse
10. $\angle KJG$; straight
11. 147°
12. 76°
13. 56.5°
14. 81°
15. 33.5°
16. 118°
17. 162°
18. 65°
19. $y = 12$, 32°
20. $m\angle BAD = 6^\circ$, $m\angle BAC = 12^\circ$
21. 106°
22. 74°
23. 67°
24. 157°
25. a. acute: $\angle AKB$, $\angle CLD$, $\angle DLE$, $\angle FMG$, $\angle BJH$, $\angle EKF$, $\angle ALH$, $\angle GLH$, $\angle BMC$, and $\angle DJF$; obtuse: $\angle BKE$, $\angle ALD$, $\angle DLG$, $\angle CMF$, $\angle BMG$, $\angle FJH$, $\angle BJD$, $\angle CLH$, $\angle HLE$, and $\angle AKJ$; right: $\angle ALC$, $\angle CLE$, $\angle ELG$, and $\angle ALG$ b. $\angle DLE$ and $\angle ALH$; $\angle CLD$ and $\angle GLH$; $\angle AKB$ and $\angle EKF$; $\angle BKE$ and $\angle AKF$; $\angle BJH$ and $\angle DJF$; $\angle BJD$ and $\angle FJH$; $\angle BMC$ and $\angle FMG$; $\angle BMG$ and $\angle CMF$; $\angle ALC$, $\angle CLE$, $\angle ELG$, and $\angle ALG$ c. $m\angle CLD = 52^\circ$, $m\angle EKF = 27^\circ$, $m\angle FJH = 115^\circ$, $m\angle FMG = 63^\circ$, $m\angle DJF = 65^\circ$, $m\angle DLG = 128^\circ$