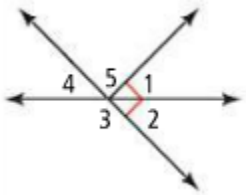
Name_____ Geometry 1-5 Worksheet: 7-33 all

Use the diagram at the right. Is each statement true? Explain.



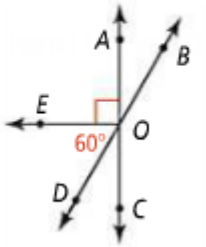
7. $\angle 1$ and $\angle 5$ are adjacent angles.

8. $\angle 3$ and $\angle 5$ are vertical angles.

9. $\angle 3$ and $\angle 4$ are complementary.

10. $\angle 1$ and $\angle 2$ are supplementary.

Name an angle or angles in the diagram described by each of the following.



11. supplementary to $\angle AOD$

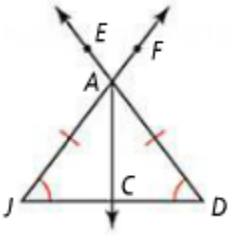
12. adjacent and congruent to $\angle AOE$

13. supplementary to $\angle EOA$

14. complementary to $\angle EOD$

15. a pair of vertical angles

For Exercises 16–23, can you make each conclusion from the information in the diagram? Explain.



16. $\angle J \cong \angle D$

17. $\angle JAC \cong \angle DAC$

18. $m\angle JCA = m\angle DCA$

19. $m\angle JCA + m\angle ACD = 180$

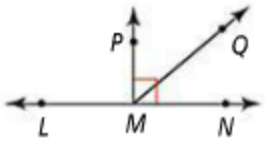
20. $\overline{AJ} \cong \overline{AD}$

21. C is the midpoint of $\overline{JD}$.

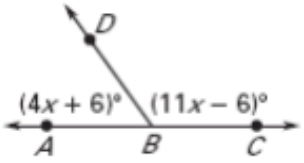
22. $\angle JAE$ and $\angle EAF$ are adjacent and supplementary.

23. $\angle EAF$ and $\angle JAD$ are vertical angles.

24. Name two pairs of angles that form a linear pair in the diagram at the right.



25. What are the measures of $\angle ABD$ and $\angle DBC$?

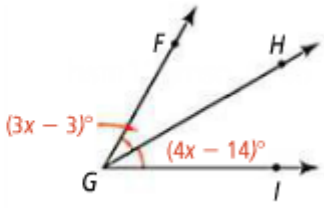


26. Algebra In the diagram, $\overrightarrow{GH}$ bisects $\angle FGI$.

a. Solve for x and find $m\angle FGH$.

b. Find $m\angle HGI$.

c. Find $m\angle FGI$.



Algebra $\overrightarrow{BD}$ **bisects** $\angle ABC$. **Solve for** x **and find** $m\angle ABC$.

27. $m\angle ABD = 5x,\ m\angle DBC = 3x + 10$

28. $m\angle ABC = 4x - 12,\ m\angle ABD = 24$

29. $m\angle ABD = 4x - 16,\ m\angle CBD = 2x + 6$

30. $m\angle ABD = 3x + 20,\ m\angle CBD = 6x - 16$

31. If $\angle A$ and $\angle B$ are supplementary and $m\angle A = (7x + 15)°$ and $m\angle B = (5x - 3)°$, find the measure of each angle.

32. If $\angle A$ and $\angle B$ are complementary and $m\angle A = (7x + 16)°$ and $m\angle B = (5x + 2)°$, find the measure of each angle.

33. **Algebra** $\angle RQS$ and $\angle TQS$ are a linear pair where $m\angle RQS = 2x + 4$ and $m\angle TQS = 6x + 20$.
   a. Solve for x.
   b. Find $m\angle RQS$ and $m\angle TQS$.
   c. Show how you can check your answer.