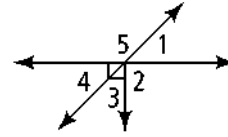


Exploring Angle Pairs Assignment

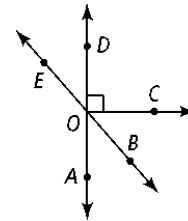
Use the diagram at the right. Is each statement true? Explain.

1. $\angle 2$ and $\angle 5$ are adjacent angles.
2. $\angle 1$ and $\angle 4$ are vertical angles.
3. $\angle 4$ and $\angle 5$ are complementary.



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

4. complementary to $\angle BOC$
5. supplementary to $\angle DOB$
6. adjacent and supplementary to $\angle AOC$



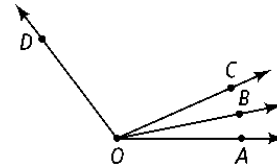
Use the diagram on the right for Exercises 7 and 8. Solve for x .
Find the angle measures.

7. $m\angle AOB = 4x - 1$; $m\angle BOC = 2x + 15$; $m\angle AOC = 8x + 8$

8. $m\angle COD = 8x + 13$; $m\angle BOC = 3x - 10$; $m\angle BOD = 12x - 6$

9. $\angle ABC$ and $\angle EBF$ are a pair of vertical angles; $m\angle ABC = 3x + 8$ and $m\angle EBF = 2x + 48$. What are $m\angle ABC$ and $m\angle EBF$?

10. $\angle JKL$ and $\angle MNP$ are complementary; $m\angle JKL = 2x - 3$ and $m\angle MNP = 5x + 2$. What are $m\angle JKL$ and $m\angle MNP$?



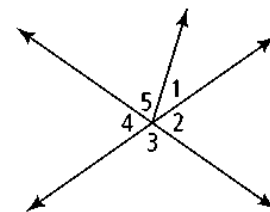
For Exercises 11–14, can you make each conclusion from the information in the diagram? Explain.

11. $\angle 3 \cong \angle 4$

12. $\angle 2 \cong \angle 4$

13. $m\angle 1 + m\angle 5 = m\angle 3$

14. $m\angle 3 = 90$



15. $\overline{KM}$ bisects $\angle JKL$. If $m\angle JKM = 86$, what is $m\angle JKL$?

16. $\overline{SV}$ bisects $\angle RST$. If $m\angle RST = 62$, what is $m\angle RSV$?

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Exploring Angle Pairs Assignment

$\overline{QS}$ bisects $\angle PQR$. Solve for x and find $m\angle PQR$.

17. $m\angle PQS = 3x$; $m\angle SQR = 5x - 20$

18. $m\angle PQS = 2x + 1$; $m\angle RQS = 4x - 15$

19. $m\angle PQR = 3x - 12$; $m\angle PQS = 30$

20. $m\angle PQS = 2x + 10$; $m\angle SQR = 5x - 17$

21. $\angle MLN$ and $\angle JLK$ are complementary, $m\angle MLN = 7x - 1$, and $m\angle JLK = 4x + 3$.

a. Solve for x .

b. Find $m\angle MLN$ and $m\angle JKL$.

c. Show how you can check your answer.

22. Describe all the situations in which the following statements are true.

a. Two vertical angles are also complementary.

b. A linear pair is also supplementary.

c. Two supplementary angles are also a linear pair.

d. Two vertical angles are also a linear pair.