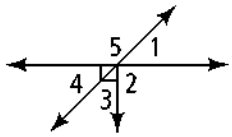
Name_____ Class _____ Date_____

1-5 Practice

Form G

Exploring Angle Pairs

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

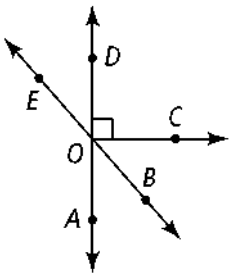


1. ∠2 and ∠5 are adjacent angles.

2. ∠1 and ∠4 are vertical angles.

3. ∠4 and ∠5 are complementary.

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

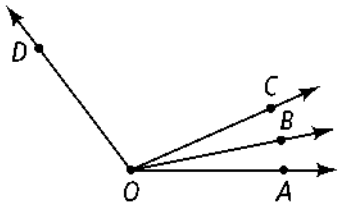


4. complementary to ∠*BOC*

5. supplementary to ∠*DOB*

6. adjacent and supplementary to ∠*AOC*

Use the diagram below for Exercises 7 and 8. Solve for *x*. Find the angle measures.



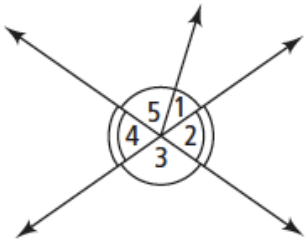
7. $m\angle AOB = 4x - 1$; $m\angle BOC = 2x + 15$; $m\angle AOC = 8x + 8$

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

9. ∠*ABC* and ∠*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. ∠*JKL* and ∠*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. ∠3 ≅ ∠4

12. ∠2 ≅ ∠4

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

14. $m\angle 3 = 90$

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

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

1-5 Practice (continued) *Form G*

Exploring Angle Pairs

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

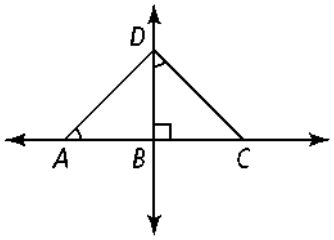
17. $m\angle PQS = 3x$; $m\angle SQR = 5x - 20$

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

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

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

For Exercises 21–24, can you make each conclusion from the information in the diagram below? Explain.



21. $\angle DAB$ and $\angle CDB$ are congruent.

22. $\angle ADB$ and $\angle CDB$ are complementary.

23. $\angle ADB$ and $\angle CDB$ are congruent.

24. $\angle ADB$ and $\angle BCD$ are congruent.

25. Algebra $\angle MLN$ 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.

26. Reasoning 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.

27. Open-Ended Write and solve an equation using an angle bisector to find the measure of an angle.