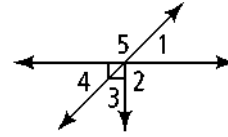


# Exploring Angle Pairs Assignment

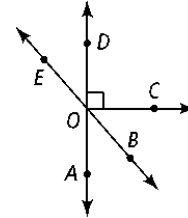
Use the diagram at the right. Is each statement true? Explain.

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  $x$ .

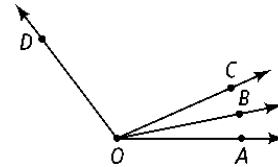
Find the angle measures.

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  $m\angle MNP$ ?



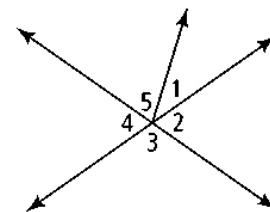
For Exercises 11–14, can you make each conclusion from the information in the diagram? Explain.

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  $m\angle RSV$ ?

Name: \_\_\_\_\_ Teacher: \_\_\_\_\_ Date: \_\_\_\_\_

## 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.