Name _____ Class _____ Date _____

Chapter Test — Form A

Chapter 2

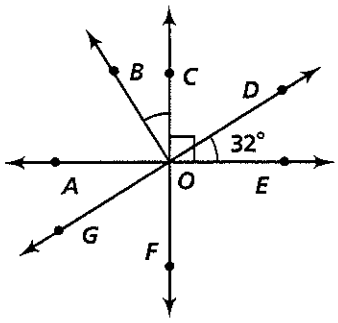
For each statement, (a) write the converse, and (b) decide whether the converse is true or false.

1. If a polygon is a triangle, then it has three sides.
2. If George lives in Texas, then he lives in the United States.
3. If two angles are vertical angles, then they are congruent.

For Exercises 4–8, name the property that justifies each statement.

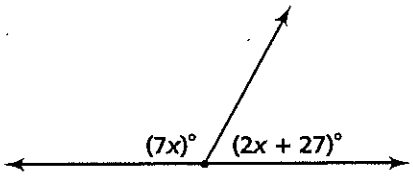
4. If $m\angle PHT = 53$ and $m\angle JYR = 37$, then $m\angle PHT + m\angle JYR = 90$.
5. If $XD = FY$ and $FY = 12$, then $XD = 12$.
6. If $XY + JM = GT + XY$, then $JM = GT$.
7. If $2(m\angle ABC) = 180$, then $m\angle ABC = 90$.
8. $RS = RS$

9. Use the diagram at the right to find the measure of each angle.
   a. $\angle AOF$ b. $\angle COD$
   c. $\angle EOG$ d. $\angle BOG$
   e. $\angle BOE$ f. $\angle FOB$



For Exercises 10–13, find the value of the variable in each diagram.

10.



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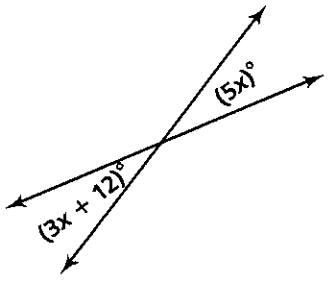

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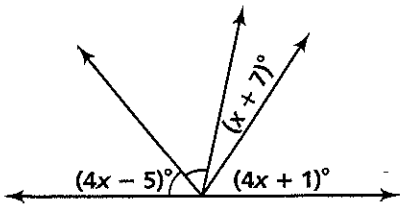

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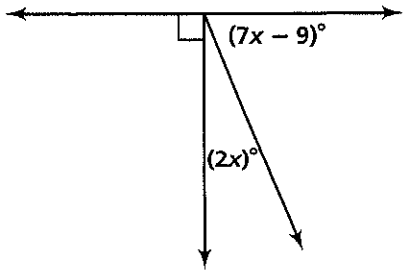


Name _____ Class _____ Date _____

Chapter Test (continued) Form A

Chapter 2

For Exercises 14–17, use deductive reasoning to draw any possible conclusions. Write *not possible* if you cannot draw any conclusions.

14. If an animal is a snake, then it is a reptile. "Gordon" is a reptile.

15. If Susan gets a hit this inning, then we will win. Susan hits a triple.

16. If the bus is late, then we will be late for school. If we are late for school, then we will receive a tardy penalty.

17. If two angles are complementary, then the sum of their measures is 90. $\angle A$ and $\angle B$ are complementary.

18. Rewrite the following biconditional as two conditionals:

A quadrilateral is a rectangle if and only if it has four right angles.

For Exercises 19–22, determine whether each statement is a good definition. If it is not, provide a counterexample.

19. A square has four congruent sides.

20. Congruent angles have the same measure.

21. Supplementary angles are two angles whose measures add up to 180.

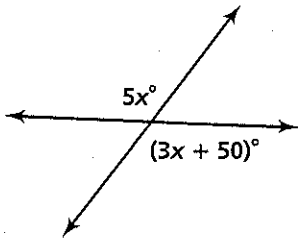
22. A bird is an animal with wings.

23. Give a reason for each step.

$2(3x - 8) = 26$	Given
$6x - 16 = 26$	**a.** ?
$6x = 42$	**b.** ?
$x = 7$	**c.** ?

Find the value of x.

24.



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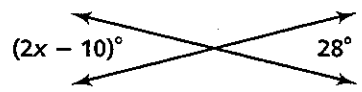
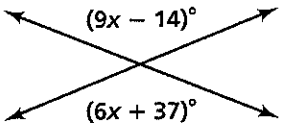


26.



$\angle FOG$ contains the points $F(4, 3)$, $O(0, 0)$, and $G(2, -1)$.

27. Find the coordinates of a point D so that $\angle DOG$ and $\angle FOG$ are adjacent complementary angles.

28. Find the coordinates of a point E so that $\overrightarrow{OE}$ is the side of a different angle that is adjacent and complementary to $\angle FOG$.