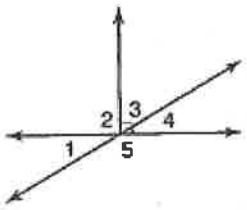
Name _____ Date _____

Angle Relationships

Identify each pair of angles as adjacent, vertical, complementary, supplementary, and/or as a linear pair.

1. $\angle 1$ and $\angle 2$

2. $\angle 1$ and $\angle 4$

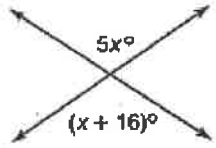


3. $\angle 3$ and $\angle 4$

4. $\angle 1$ and $\angle 5$

Find the value of x.

5.



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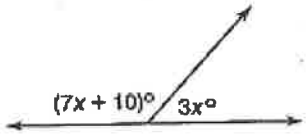

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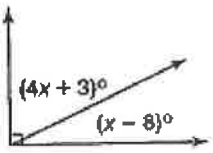
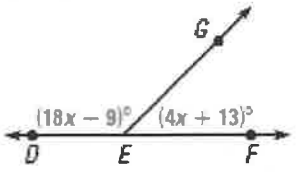


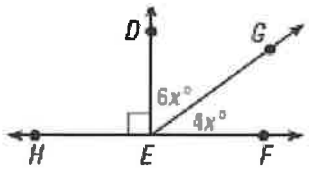
8. $\angle 1$ is a complement of $\angle 2$. $\angle 1 = 68$. Find $\angle 2$.

9. $\angle 3$ is a supplement of $\angle 4$. $\angle 4 = 56$. Find $\angle 3$.

10. Find x.



11. Find x.



12. The measure of one angle is 24° more than its complement. What are the measures of the angles?

13. The measure of one angle is three times the measure of its complement. Find the measure of each angle.

14. Two angles form a linear pair. The measure of one angle is 8 times the measure of the other angle. Find the measure of each angle.

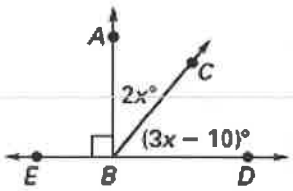
15. The measure of one angle is 38° less than the measure of its supplement. Find the measure of each angle.

∠1 and ∠2 are complementary angles and ∠2 and ∠3 are supplementary angles. Given the measure of ∠1, find $m\angle 2$ and $m\angle 3$.

1. $m\angle 1 = 80°$
2. $m\angle 1 = 33°$
3. $m\angle 1 = 72°$
4. $m\angle 1 = 7°$

Find $m\angle ABC$ and $m\angle CBD$.

5.



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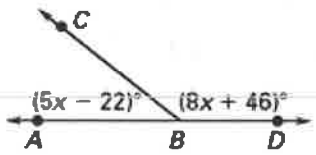

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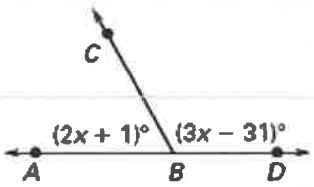
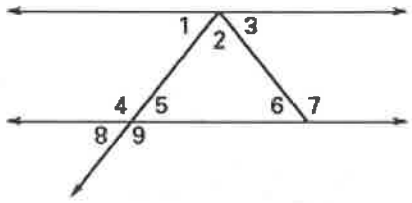


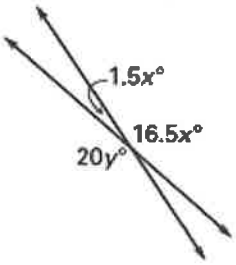
In Exercises 8–12, use the diagram. Tell whether the angles are *vertical angles*, a *linear pair*, or *neither*.

8. ∠1 and ∠3
9. ∠2 and ∠3
10. ∠4 and ∠5
11. ∠5 and ∠8
12. ∠4 and ∠9



Find the values of *x* and *y*.

16.



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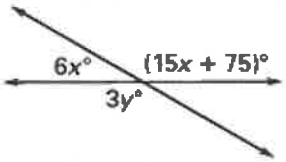

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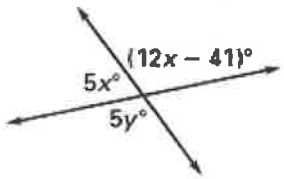

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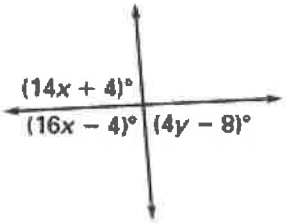

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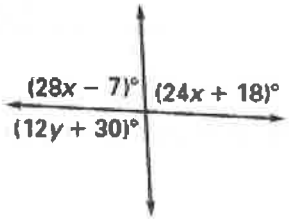

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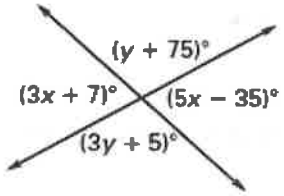

22. Let $\angle A$ and $\angle B$ be complementary angles and let $m\angle A = (2x^2 + 35)°$ and $m\angle B = (x + 10)°$. What is (are) the value(s) of *x*. What are the measures of the angles?