LESSON 1.5 Practice
For use with pages 35–41

$\angle 1 + \angle 2 = 90°$ $\angle 2 + \angle 3 = 180°$

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

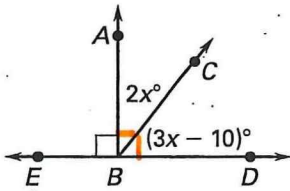1. $m\angle 1 = 80°$ 2. $m\angle 1 = 33°$ 3. $m\angle 1 = 72°$ 4. $m\angle 1 = 7°$

$m\angle 2 = 90 - 80$ $m\angle 2 = 10°$
$m\angle 3 = 180 - 10$ $m\angle 3 = 170°$

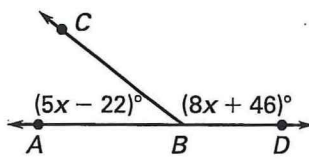Find $m\angle ABC$ and $m\angle CBD$.

$m\angle ABC + m\angle CBD = m\angle ABD$

5.

$2x°$
$(3x - 10)°$
E B D A C

6.

C
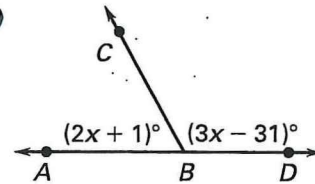$(5x - 22)°$ $(8x + 46)°$
A B D

7.

C
$(2x + 1)°$ $(3x - 31)°$
A B D

In Exercises 8–12 use the diagram. Tell whether the angles are vertical angles, a linear pair, or neither.
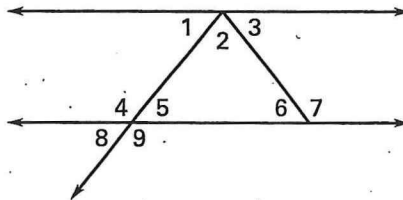
8. $\angle 1$ and $\angle 3$

9. $\angle 2$ and $\angle 3$

1 2 3
4 5 6 7
8 9

10. $\angle 4$ and $\angle 5$

11. $\angle 5$ and $\angle 8$

12. $\angle 4$ and $\angle 9$

$x = 3y$ $x + y = 90°$

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

$x + y = 90°$
$x = 3y$

$3y + y = 90°$ $x = 90 - 22.5$ $22.5°$ and $67.5°$
$4y = 90$ $x = 67.5°$
$y = 22.5°$

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.

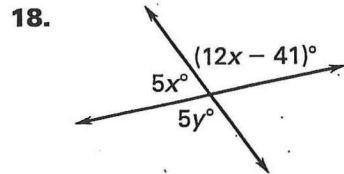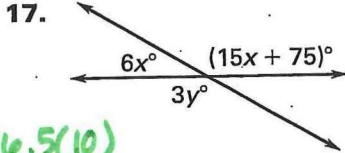15. The measure of one angle is 38° less than the measure of its supplement. Find the measure of each angle.

LESSON 1.5 **Practice** *continued*
For use with pages 35–41

[handwritten: △ = △ (purple); △ = △ (green); △ + △ = 180 (top)]

Find the values of x and y.

16. *[handwritten annotations:]*

1.5(10) = 15

$-1.5x°$
$16.5x°$
$20y°$

$△ + △ = 180$
$1.5x + 16.5x = 180$
$18x = 180$
$\boxed{x = 10}$

$180 - 15 = 165$
$20y = 16.5(10)$
$20y = 165$
$\boxed{y = 8.25}$
$20y = 165$
$y = \frac{33}{4}$ or 8.25

17. $6x°$ $(15x + 75)°$ $3y°$

18. $(12x - 41)°$ $5x°$ $5y°$

19. $(14x + 4)°$ $(16x - 4)°$ $(4y - 8)°$

20. $(28x - 7)°$ $(24x + 18)°$ $(12y + 30)°$

21. $(y + 75)°$ $(3x + 7)°$ $(5x - 35)°$ $(3y + 5)°$
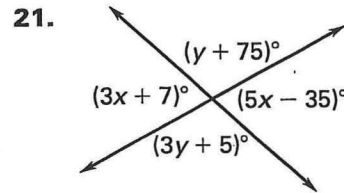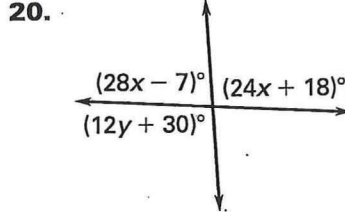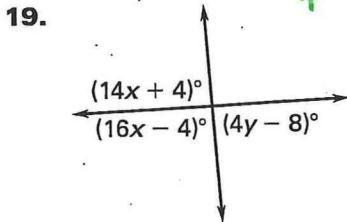
Tell whether the statement is *always*, *sometimes*, or *never* true.

22. Two complementary angles form a linear pair.

23. The supplement of an obtuse angle is an acute angle.

24. An angle that has a supplement also has a complement.

[handwritten: ∠A + ∠B = 90°]

∠A and ∠B are complementary angles. Find m∠A and m∠B.

25. $m\angle A = x°$

$m\angle B = (2x - 75)°$

26. $m\angle A = (4x + 34)°$

$m\angle B = (x + 36)°$

27. $m\angle A = (4x - 18)°$

$m\angle B = (6x - 18)°$

28. $m\angle A = (2x + 10)°$

$m\angle B = (-x + 55)°$

LESSON 1.5 **Practice** *continued* #29 -32
For use with pages 35–41

∠A + ∠B = 180 ·

∠A and ∠B are supplementary angles. Find m∠A and m∠B.

29. $m\angle A = (x + 50)°$

$m\angle B = (x + 100)°$

30. $m\angle A = 6x°$

$m\angle B = (x + 5)°$

31. $m\angle A = (2x + 3)°$

$m\angle B = (3x - 223)°$

32. $m\angle A = (-4x + 40)°$

$m\angle B = (x + 50)°$

Roof trusses can have several different layouts. The diagram below shows one type of roof truss made out of beams of wood. Use the diagram to identify two different examples of the indicated type of angle pair. In the diagram, ∠HBC and ∠BCE are right angles.
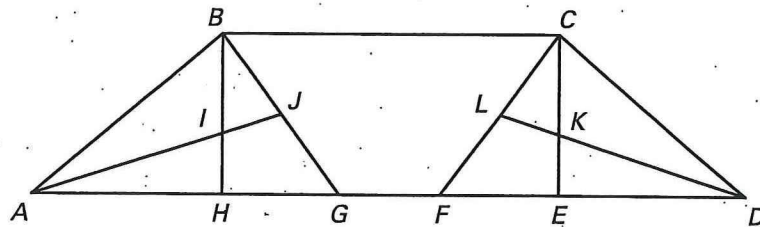
33. Supplementary angles

34. Complementary angles

35. Vertical angles

36. Linear pair angles

37. Adjacent angles

38. **Angle of elevation** An *angle of elevation* is the angle between the horizontal line and the line of sight of an object above the horizontal. In the diagram, a plane is flying horizontally across the sky and ∠RST represents the angle of elevation. How is the angle of elevation affected as the plane flies closer to the person? *Explain.*

Not drawn to scale