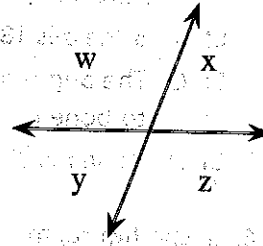


**Practice  
10-6**

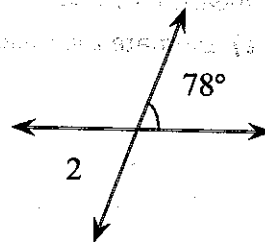
**Problem Solving**

1. Which of the conclusions about the measure of angles  $w$ ,  $x$ ,  $y$ , and  $z$  are true? Check all that apply.

- A. If angle  $w$  is obtuse then angle  $z$  is acute.
- B. If angle  $x$  is acute then angle  $y$  is obtuse.
- C. The measure of angle  $w$  is the same as the measure of angle  $z$ .
- D. If angle  $y$  is acute then angle  $z$  is obtuse.



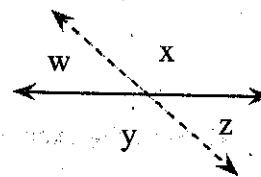
2. Find  $m\angle 2$ .



(The figure is not shown to scale.)

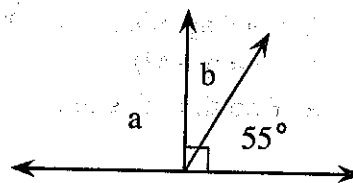
3. Which of the conclusions about the measure of angles  $w$ ,  $x$ ,  $y$ , and  $z$  are true? Check all that apply.

- A. The sum of the measure of angle  $x$  and the measure of angle  $y$  is  $180^\circ$ .
- B. If angle  $w$  is obtuse then angle  $z$  is acute.
- C. The measure of angle  $w$  is the same as the measure of angle  $z$ .
- D. If angle  $y$  is obtuse then angle  $z$  is acute.



4. A student needed to find the measure of angle  $b$ . He incorrectly said  $m\angle b = 125^\circ$ .

a) Find the correct measure of angle  $b$ .

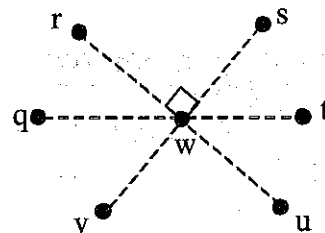


(The figure is not shown to scale.)

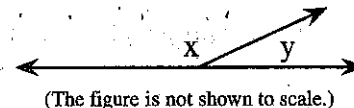
b) What mistake did he likely make?

- A. He subtracted  $55^\circ$  from  $90^\circ$  instead of  $180^\circ$ .
- B. He subtracted  $55^\circ$  from  $180^\circ$  instead of  $90^\circ$ .
- C. He added  $55^\circ$  to  $180^\circ$  instead of  $90^\circ$ .
- D. He added  $55^\circ$  to  $90^\circ$  instead of  $180^\circ$ .

5. A dog house is at the center of a yard. The dog buried bones at each of the points. Use the geometric figure to decide which of the conclusions about the locations of the bones are true. Check all that apply.



- A. The angle from bone s to bone t is the same as the angle from bone q to bone v.
- B. Bone q is  $180^\circ$  away from bone s.
- C. The angle from bone r to bone t is the same as the angle from bone u to bone r.
- D. Bone r is  $90^\circ$  away from bone v.
6. In the figure,  $m\angle y = 22^\circ$ . Round the measure of  $\angle y$  to the nearest  $10^\circ$  to estimate the measure of  $\angle x$ .

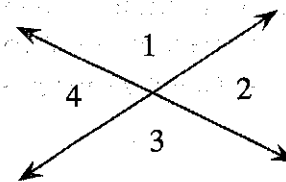


- a) Estimate the measure of  $\angle y$ .

- b) Estimate the measure of  $\angle x$ .

- c) Find the exact measure of  $\angle x$ .

7. In the diagram,  $m\angle 1 = 99^\circ$ ,  $m\angle 2 = (x + 54)^\circ$ , and  $m\angle 3 = (y - 47)^\circ$ .



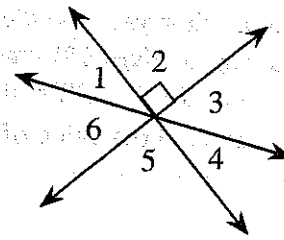
(The figure is not shown to scale.)

- a) Find the value of  $x$ .

- b) Find the value of  $y$ .

8. In the diagram, angle 2 is a right angle and  $m\angle 1 = 30^\circ$ .

a) Find  $m\angle 3$ .



(The figure is not shown to scale.)

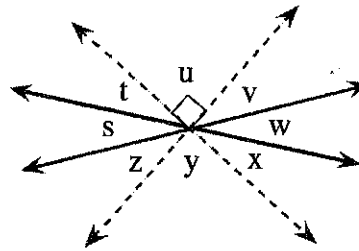
b) Find  $m\angle 4$ .

c) Find  $m\angle 5$ .

d) Find  $m\angle 6$ .

9. a) **Challenge** Use the geometric figure to make a conclusion about the angles.

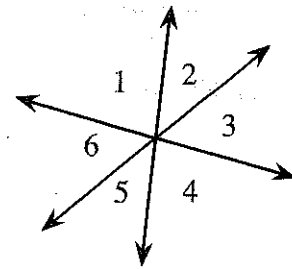
- A. The sum of  $m\angle x$  and  $m\angle y$  is  $180^\circ$ .
- B.  $m\angle u$  is the same as  $m\angle y$ .
- C.  $m\angle z$  is the same as  $m\angle x$ .
- D.  $m\angle v$  is the same as  $m\angle x$ .



- b) Make four additional conclusions about this geometric figure.

- c) Explain the rules you used to come to the conclusions.

10. **Challenge** In the diagram,  $m\angle 1 = 64^\circ$ ,  $m\angle 2 = 28^\circ$ ,  
 $m\angle 3 = (w + 27)^\circ$ ,  $m\angle 4 = (x - 19)^\circ$ ,  
 $m\angle 5 = (7 + y)^\circ$ , and  $m\angle 6 = (124 - z)^\circ$ .



(The figure is not shown to scale.)

a) Find the value of  $w$ .

b) Find the value of  $x$ .

c) Find the value of  $y$ .

d) Find the value of  $z$ .