Name _____ Class _____ Date _____

2-5 • Guided Problem Solving

GPS Student Page 114, Exercise 20

Coordinate Geometry $\angle AOX$ contains points $A(1, 3)$, $O(0, 0)$, and $X(4, 0)$.

a. Find the coordinates of a point B so that $\angle BOA$ and $\angle AOX$ are adjacent complementary angles.

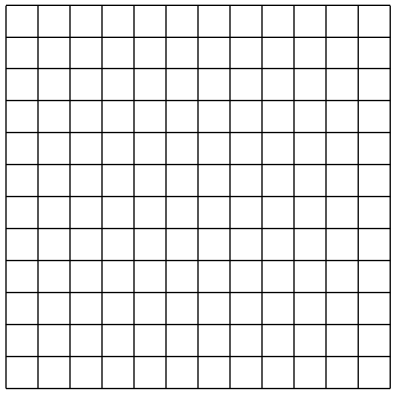
b. Find the coordinates of a point C so that $\overrightarrow{OC}$ is a side of a different angle that is adjacent and complementary to $\angle AOX$.

Read and Understand

1. If $\angle AOX$ and $\angle BOA$ are complementary, then $m\angle AOX + m\angle BOA =$ _____.

Plan and Solve

2. Graph the points $A(1, 3)$, $O(0, 0)$, and $X(4, 0)$. Draw $\angle AOX$.



3. Where must a point B lie so that $\angle BOA$ and $\angle AOX$ are adjacent and complementary? _____

4. Give the coordinates of a point B. _____

5. If $\angle BOA$ and $\angle COX$ are both adjacent and complementary to $\angle AOX$, then $\angle COX \cong \angle BOA$. Draw $\angle COX$ such that $\angle COX \cong \angle BOA$.

6. How do $\angle COX$ and $\angle AOX$ relate? _____

7. What are the coordinates of a point C so that $\overrightarrow{OC}$ is adjacent and complementary to $\angle AOX$? _____

Look Back and Check

8. If $\angle AOX$ and $\angle BOA$ are complementary angles, what kind of angle is formed by their sum? _____

9. Do $\angle AOX$ and $\angle BOA$ from the angle in Step 8? _____ How can you tell? _____

Solve Another Problem

10. Find the coordinates of a point D so that $\angle DOA$ and $\angle AOX$ are adjacent supplementary angles. _____