Draw Me a Riddle

Use the rules below to draw a figure.

- Line $AB$ intersects with line $CD$ at point $X$.
- Line segment $AX$ has the following points on it: $M$, $N$, and $O$.
- A ray with endpoint $O$ intersects line segment $XC$ at point $Y$.

1. Will ray $OY$ intersect line $AB$ at any point other than $O$?

2. Name two line segments within line segment $XC$.

3. Name three line segments within line segment $AX$.

4. Will ray $OY$ intersect line $CD$ at any point other than $Y$? Explain.

5. Name the shape that has endpoints $X$, $O$, and $Y$.

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- Line \(AB\) intersects with line \(CD\) at point \(X\).
- Line segment \(AX\) has the following points on it: \(M, N,\) and \(O\).
- A ray with endpoint \(O\) intersects line segment \(XC\) at point \(Y\).

1. Will ray \(OY\) intersect line \(AB\) at any point other than \(O\)?
   - no

2. Name two line segments within line segment \(XC\).
   - \(XY\) and \(YC\) (Points may be named in any order.)

3. Name three line segments within line segment \(AX\).
   - Possible answers include: \(AM, MN, AO, AN, MX, MO, NO, NX,\) and \(OX\).

4. Will ray \(OY\) intersect line \(CD\) at any point other than \(Y\)? Explain.
   - No; the ray continues on forever in the direction of the arrow, and the line continues in two other directions.

5. Name the shape that has endpoints \(X, O,\) and \(Y\).
   - triangle

6. Picture ray \(XD\). Does it intersect ray \(OY\) at any point? Explain.
   - No; a ray with endpoint \(X\) would continue forever in the opposite direction.