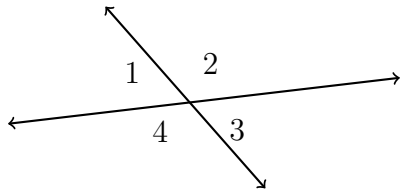
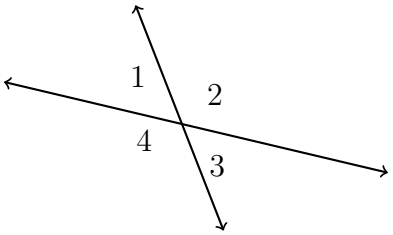
3.8 Do Now: Modeling angle situations with an equation

Do Not Solve!
Model the situation with an equation. Circle where it states what to find.

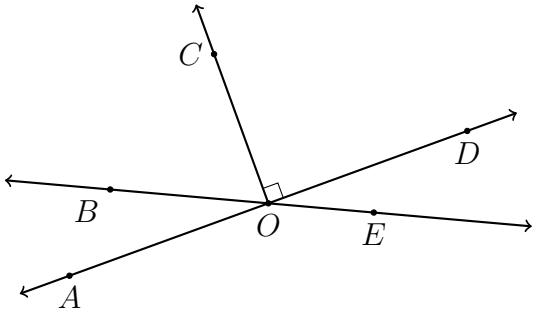
1. Two lines intersect making four angles: $\angle 1$, $\angle 2$, $\angle 3$, and $\angle 4$. Given that $m\angle 2 = 4x+5$ and $m\angle 4 = 6x + 15$, find x.



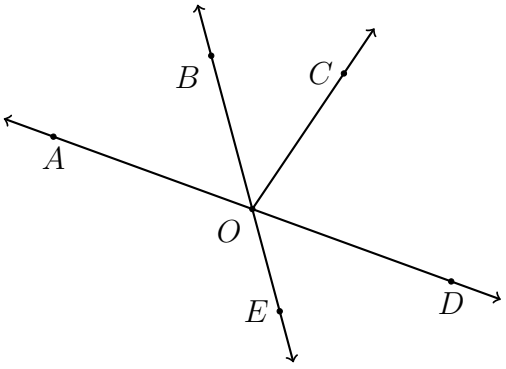
2. Given that $m\angle 1 = 5x + 8$ and $m\angle 2 = 7x - 6$ as shown in the diagram, find $m\angle 2$.



3. In the diagram below $m\angle AOB = 2x + 5$ and $m\angle BOC = 5x - 20$. Find x.

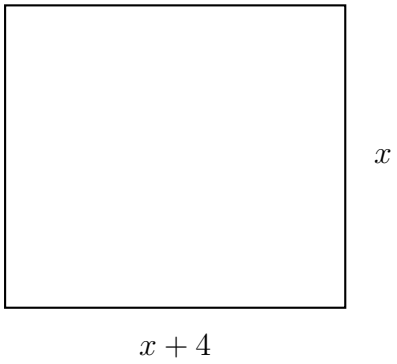


4. In the diagram below $m\angle DOE = x + 65°$ and $m\angle AOB = 3x + 5$. Find $m\angle AOB$.



5. The length of the given rectangle is 4 more than the width. Its area is 77. Find the length and width of the rectangle using an algebraic method.

   (the drawing is not to scale)



6. The circle with center B is shown below with diameter $\overline{AC}$ and radius $\overline{BD}$. Given $AC = 6x + 14$ and $BD = 5x + 1$. Find the radius of the circle.