

Lesson 18: Problem Solving with Angles

NYS Learning Standards:

7.G.5 Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure.

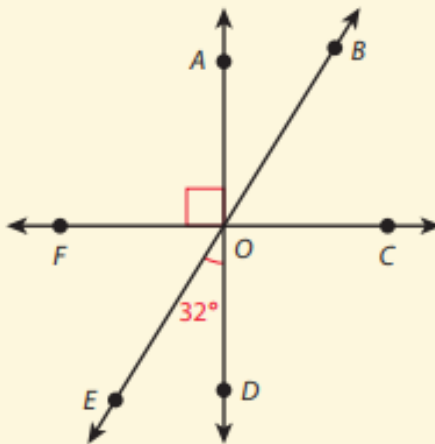
Learning Outcome:

- Write equations to find unknown angle measures using properties of supplementary and complementary angles.
- Write equations to find unknown angle measures using properties of vertical angles.
- Write equations to find unknown angle measures using properties of adjacent angles.
- Write equations to find unknown angles in more complex figures combining supplementary, complementary, vertical, and adjacent angles.

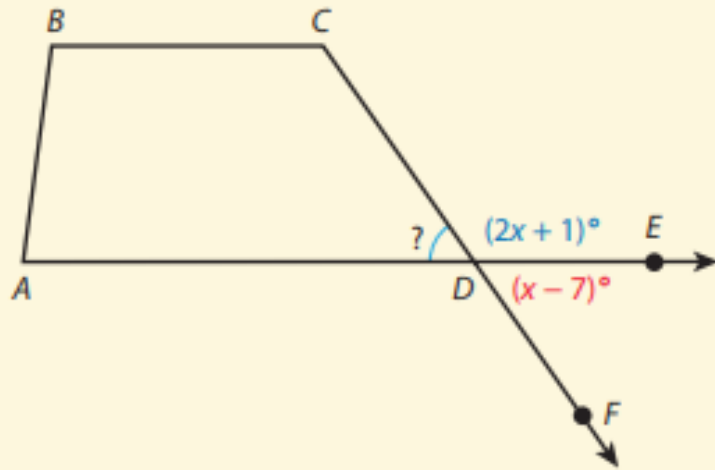
Vocabulary:

- Complementary Angles: **two angles whose measures add up to 90°** .
- Supplementary Angles: **two angles whose measures add up to 180°** .
- Vertical Angles: **opposite angles formed when two lines intersect; vertical angles are congruent.**

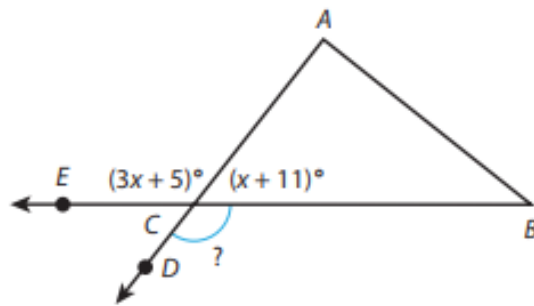
Three lines, \overleftrightarrow{AD} , \overleftrightarrow{BE} , and \overleftrightarrow{CF} intersect at point O as shown in the diagram. \overleftrightarrow{AD} is perpendicular to \overleftrightarrow{FC} . $\angle EOD$ measures 32° . What is the measure of $\angle AOB$?



In the figure shown, what is the measure of $\angle ADC$?



In triangle ABC , the measure of $\angle ACB$ is $(x + 11)^\circ$ and the measure of $\angle ACE$ is $(3x + 5)^\circ$.



Find the measure of $\angle AOE$ in the diagram below.

