

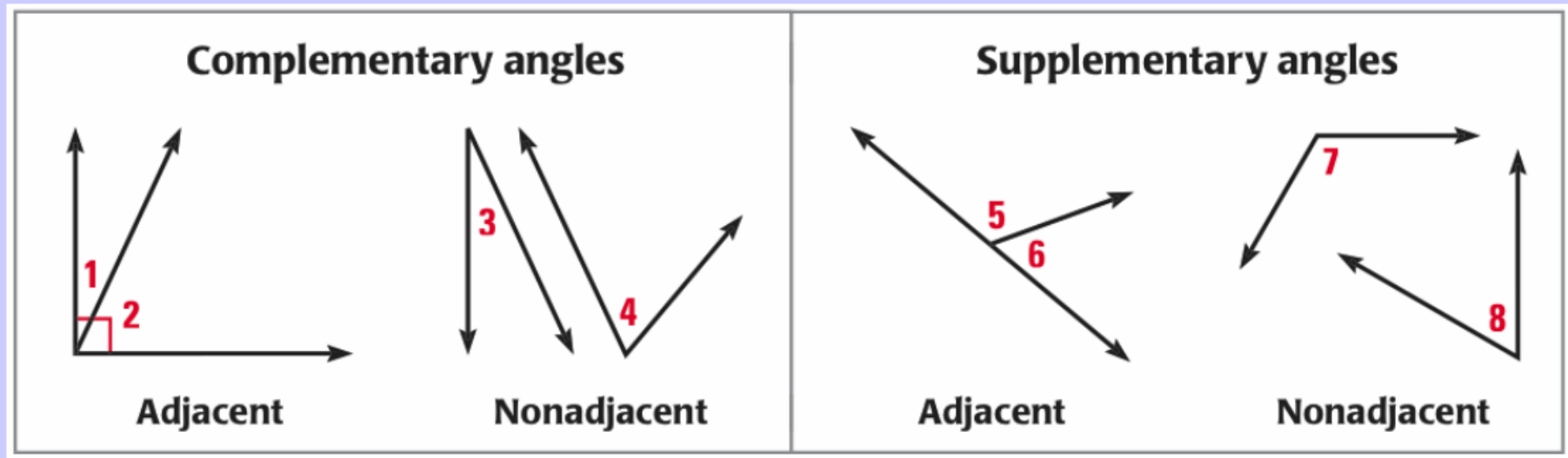
1.5 Describe Angle Pair Relationships

Goal • Use special angle relationships to find angle measures.

*complementary angles- angles whose sum of their measures is 90°

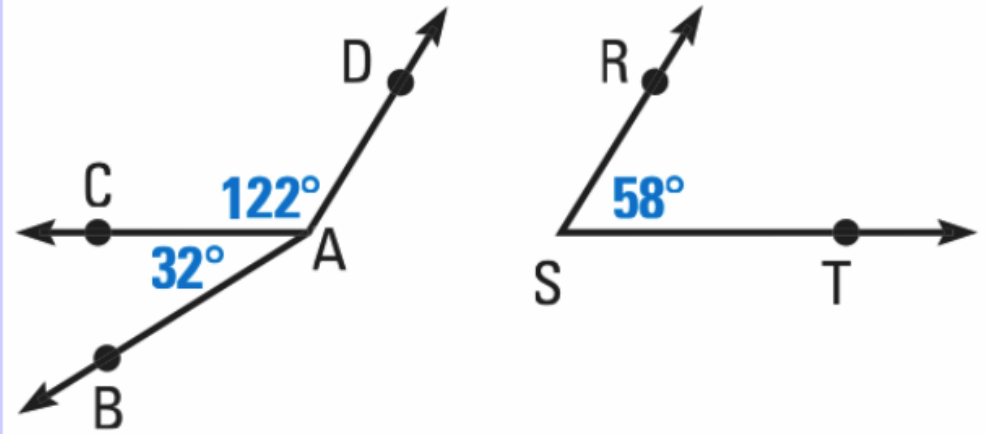
*supplementary angles- angles whose sum of their measures is 180°

*adjacent angles- angles that share a common vertex and side, but have no common interior points



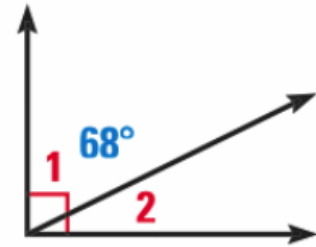
EXAMPLE 1 Identify complements and supplements

In the figure, name a pair of complementary angles, a pair of supplementary angles, and a pair of adjacent angles.

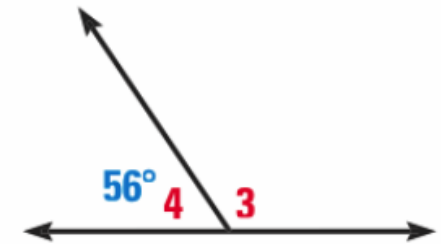


EXAMPLE 2 Find measures of a complement and a supplement

a. Given that $\angle 1$ is a complement of $\angle 2$ and $m\angle 1 = 68^\circ$, find $m\angle 2$.

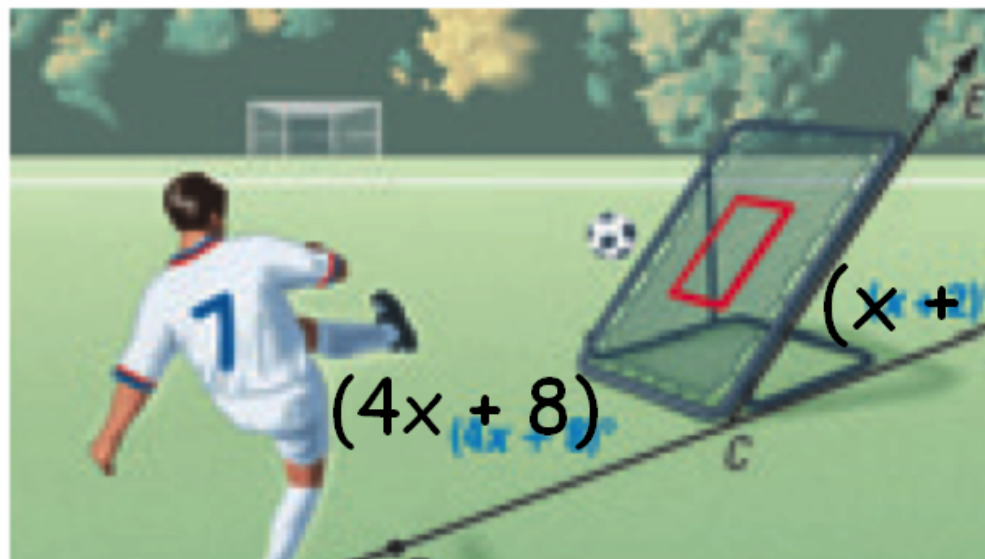


b. Given that $\angle 3$ is a supplement of $\angle 4$ and $m\angle 4 = 56^\circ$, find $m\angle 3$.

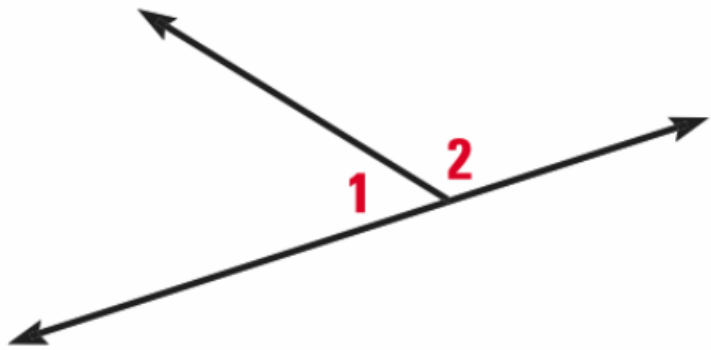


EXAMPLE 3 Find angle measures

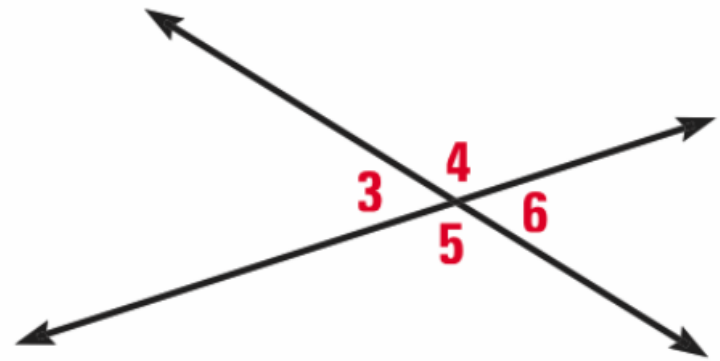
SPORTS When viewed from the side, the frame of a ball-return net forms a pair of supplementary angles with the ground. Find $m\angle BCE$ and $m\angle ECD$.



linear pair-sides forming opposite rays (a line);
angles in a linear pair are supplementary angles_
vertical angles- Two angles whose sides form 2
pairs of opposite rays (I think of an X)



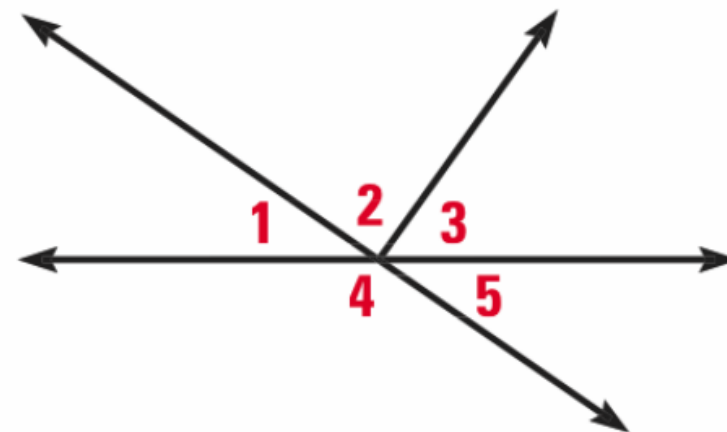
$\angle 1$ and $\angle 2$ are a linear pair.



$\angle 3$ and $\angle 6$ are vertical angles.
 $\angle 4$ and $\angle 5$ are vertical angles.

EXAMPLE 4 Identify angle pairs

Identify all of the linear pairs and all of the vertical angles in the figure at the right.



EXAMPLE 5 Find angle measures in a linear pair

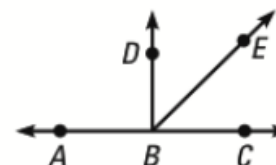
Two angles form a linear pair. The measure of one angle is 5 times the measure of the other. Find the measure of each angle. (Draw a picture to help!)

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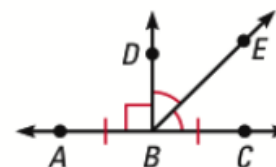
CONCEPT SUMMARY*For Your Notebook***Interpreting a Diagram**

There are some things you can conclude from a diagram, and some you cannot. For example, here are some things that you **can conclude** from the diagram at the right:

- All points shown are coplanar.
- Points A , B , and C are collinear, and B is between A and C .
- \overleftrightarrow{AC} , \overleftrightarrow{BD} , and \overleftrightarrow{BE} intersect at point B .
- $\angle DBE$ and $\angle EBC$ are adjacent angles, and $\angle ABC$ is a straight angle.
- Point E lies in the interior of $\angle DBC$.



In the diagram above, you **cannot conclude** that $\overline{AB} \cong \overline{BC}$, that $\angle DBE \cong \angle EBC$, or that $\angle ABD$ is a right angle. This information must be indicated, as shown at the right.



Assignment:

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