

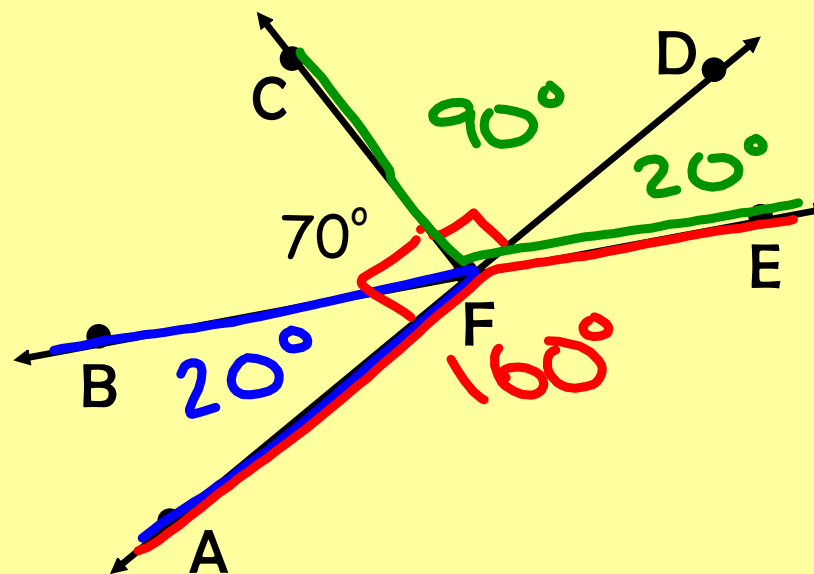
## 9/10/19 - Warm Up Problem

Find the measure of each angle.

$$m\angle BFA = 20^\circ$$

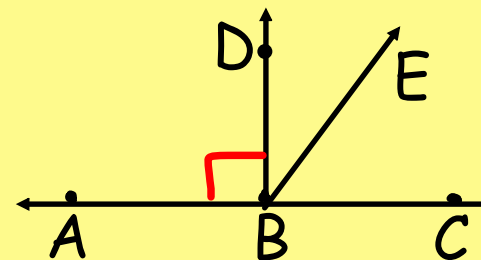
$$m\angle AFE = 160^\circ$$

$$m\angle CFE = 110^\circ$$



## Interpreting Diagrams

If a diagram has no marks or measures included on it, some information can be concluded from the diagram and some cannot.



## Finding Information from a Diagram

There are some relationships you can conclude such as:

- Angles are adjacent
- Angles are adjacent and supplementary (linear pair) 180°
- Angles are vertical angles



There are some relationships you CANNOT conclude:

- Angles or segments are congruent
- An angle is a right angle
- Angles are complementary

Can you conclude each statement from the diagram?

Explain.

$$\angle 1 \cong \angle 2$$

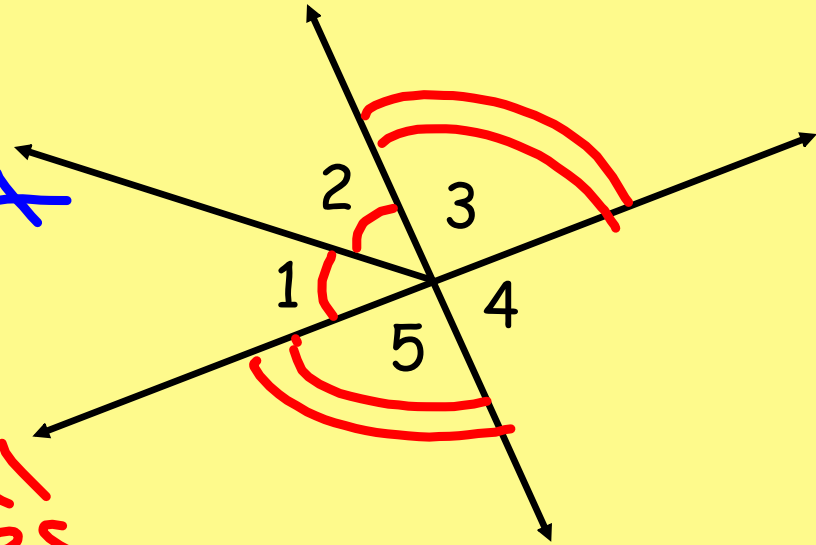
yes - congruent marks

$$\angle 3 \cong \angle 5$$

yes - vertical angles

$\angle 1$  and  $\angle 2$  are complementary

NO - NO measures given

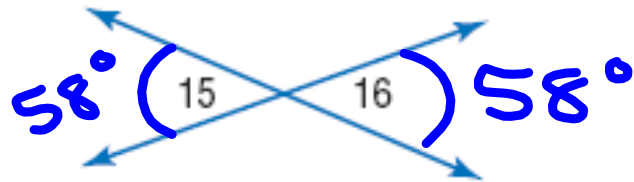


# Calculating Angle Measures

Find  $x$ . Then find the measure of each numbered angle.

$$m\angle 15 = x,$$

$$m\angle 16 = 6x - 290$$

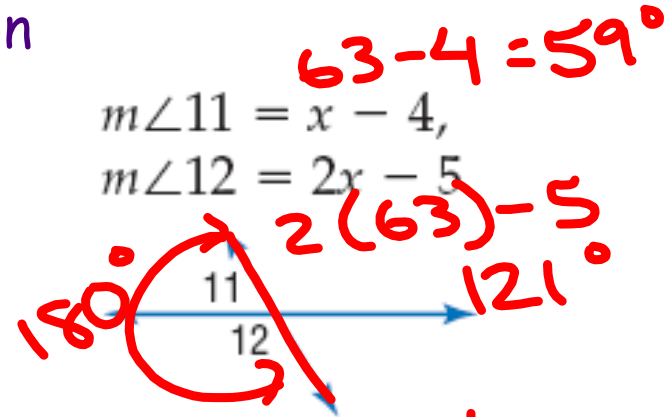


$$\begin{array}{r} x = 6x - 290 \\ -6x \quad -6x \\ \hline -5x = -290 \\ \underline{-5} \quad \underline{-5} \\ x = 58 \end{array}$$

- Read the problem carefully
- Write the equation
- Solve for  $x$

$$m\angle 11 = x - 4,$$

$$m\angle 12 = 2x - 5$$



$$\begin{array}{r} x - 4 + 2x - 5 = 180 \\ 3x - 9 = 180 \\ +9 \quad +9 \\ \hline 3x = 189 \\ \underline{3} \quad \underline{3} \\ x = 63 \end{array}$$

**Assignment:**

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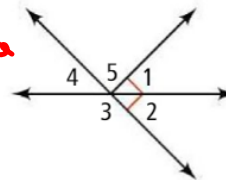
(7-23) - due by Fri. 9/7

\*Make sure you explain when the directions call for it!

Use the diagram at the right. Is each statement true? Explain.

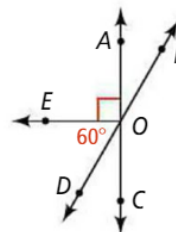
- 7.  $\angle 1$  and  $\angle 5$  are adjacent angles.
- 8.  $\angle 3$  and  $\angle 5$  are vertical angles.
- 9.  $\angle 3$  and  $\angle 4$  are complementary.
- 10.  $\angle 1$  and  $\angle 2$  are supplementary.

*Yes they share a side*



Name an angle or angles in the diagram described by each of the following.

- 11. supplementary to  $\angle AOD$
- 12. adjacent and congruent to  $\angle AOE$
- 13. supplementary to  $\angle EOA$
- 14. complementary to  $\angle EOD$
- 15. a pair of vertical angles



For Exercises 16–23, can you make each conclusion from the information in the diagram? Explain.

- 16.  $\angle J \cong \angle D$
- 17.  $\angle JAC \cong \angle DAC$
- 18.  $m\angle JCA = m\angle DCA$
- 19.  $m\angle JCA + m\angle ACD = 180$
- 20.  $\overline{AJ} \cong \overline{AD}$
- 21.  $C$  is the midpoint of  $\overline{JD}$ .
- 22.  $\angle JAE$  and  $\angle EAF$  are adjacent and supplementary.
- 23.  $\angle EAF$  and  $\angle JAD$  are vertical angles.

