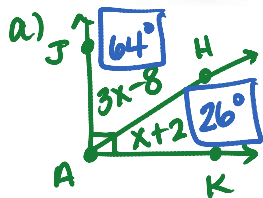


**MULTI-STEP TEST PREP**



33.  $H$  is in the interior of  $\angle JAK$ .  $m\angle JAH = (3x - 8)^\circ$ , and  $m\angle KAH = (x + 2)^\circ$ . Draw a picture of each relationship. Then find the measure of each angle.

- $\angle JAH$  and  $\angle KAH$  are complementary angles.
- $\angle JAH$  and  $\angle KAH$  form a linear pair.
- $\angle JAH$  and  $\angle KAH$  are congruent angles.

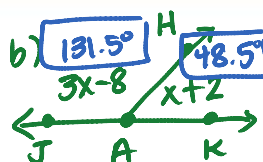


$$3x - 8 + x + 2 = 90$$

$$4x - 6 = 90$$

$$4x = 96$$

$$x = 24$$

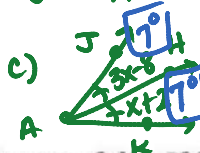


$$3x - 8 + x + 2 = 180$$

$$4x - 6 = 180$$

$$4x = 186$$

$$x = 46.5$$



$$3x - 8 = x + 2$$

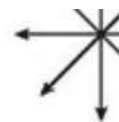
$$2x = 10$$

$$x = 5$$

Determine whether each statement is true or false. If false, explain why.

- If an angle is acute, then its complement must be greater than its supplement. *False: ex: acute  $\angle = 20^\circ$ , comp  $\angle = 70^\circ$ , supp  $\angle = 160^\circ$*
- A pair of vertical angles may also form a linear pair. *False, V.A. must be across from each other - not next to.*
- If two angles are supplementary and congruent, the measure of each angle is  $90^\circ$ . *True*
- If a ray divides an angle into two complementary angles, then the original angle is a right angle. *True*
- Write About It** Describe a situation in which two angles are both congruent and complementary. Explain. *you tell me 😊*

44. The supplement of an angle is 4 more than twice its complement. Find the measure of the angle.



45. An angle's measure is twice the measure of its complement. The larger angle is how many degrees greater than the smaller angle?

46. The supplement of an angle is  $36^\circ$  less than twice the supplement of the complement of the angle. Find the measure of the supplement.

*Challenged! ★*

44.  $180 - x = 2(90 - x) + 4$

$$180 - x = 180 - 2x + 4$$

$$180 - x = 184 - 2x$$

$$x = 4$$

**angle =  $4^\circ$**

45.  $x = 2(90 - x)$

$$x = 180 - 2x$$

$$3x = 180$$

$$x = 60$$

angle =  $60^\circ$

comp =  $90 - 60 = 30^\circ$

Larger  $\angle = 60 - 30 = 30^\circ$

**Larger  $\angle$  is  $30^\circ$  greater than smaller  $\angle$**

46.  $180 - x = 2(180 - (90 - x)) - 36$

$$180 - x = 2(180 - 90 + x) - 36$$

$$180 - x = 2(90 + x) - 36$$

$$180 - x = 180 + 2x - 36$$

$$180 - x = 144 + 2x$$

$$-3x = -36$$

$$x = 12$$

angle =  $12^\circ$     **Supp =  $180 - 12$**

**Supp =  $168^\circ$**