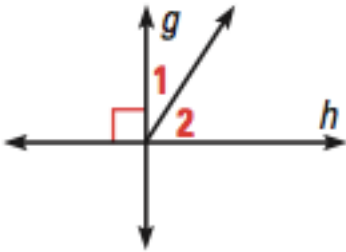


**LEVEL: EMERGING**

Directions: Use the diagram to answer the questions 1 and 2.



1) Which of the following is true if  $g \perp h$ ?

- (A)  $m\angle 1 + m\angle 2 > 180^\circ$       (B)  $m\angle 1 + m\angle 2 < 180^\circ$   
 (C)  $m\angle 1 + m\angle 2 = 180^\circ$       (D) None of these

Explain your answer:

\_\_\_\_\_

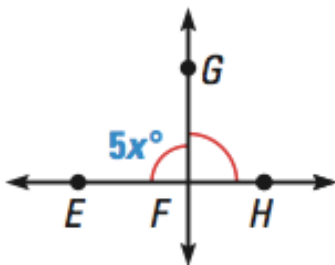
2) If  $g \perp h$  and  $m\angle 1 = 40^\circ$ , what is the  $m\angle 2$ ?

- (A)  $40^\circ$       (B)  $50^\circ$       (C)  $50^\circ$       (D)  $140^\circ$

**LEVEL: PROFICIENT**

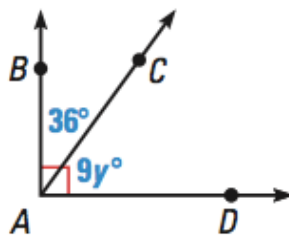
Directions: Find the value of  $x$ . Then find the measure of the indicated angle.

3)



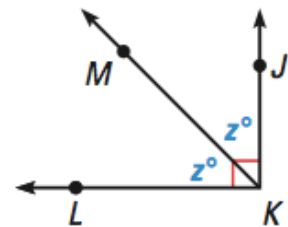
$x = \underline{\hspace{1cm}}$        $\angle EFG = \underline{\hspace{1cm}}$

4)



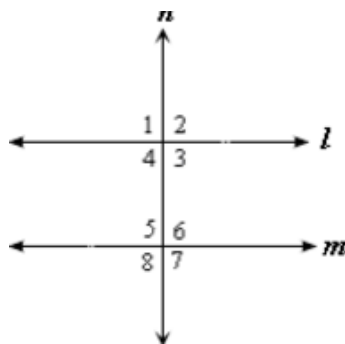
$y = \underline{\hspace{1cm}}$        $\angle CAD = \underline{\hspace{1cm}}$

5)



$z = \underline{\hspace{1cm}}$        $\angle JKM = \underline{\hspace{1cm}}$

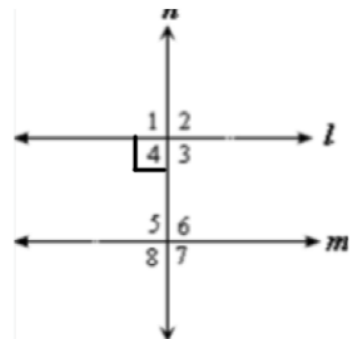
6) If  $m\angle 4 = 90^\circ$ , then which of the following is true?



Select all that apply.

- (A)  $n \perp m$   
 (B)  $l \perp m$   
 (C)  $l \parallel m$   
 (D)  $m\angle 4 + m\angle 5 = 180^\circ$   
 (E)  $\angle 1$  is a supplement to  $\angle 4$

7) If  $m\angle 6 = 90^\circ$ , then which of the following is true?



Select all that apply.

- (A)  $l \parallel m$   
 (B)  $l \perp m$   
 (C)  $\angle 5$  forms a linear pair with  $\angle 6$   
 (D)  $m\angle 8 + m\angle 6 = 180^\circ$   
 (E)  $\angle 5$  is a complement

## LEVEL: MASTERY

8) If line  $m$  is perpendicular to line  $n$  and line  $p$  is perpendicular to line  $n$ , then which of the following must be true? (Select all that apply!)

- (A)  $m \perp n$
- (B)  $m \parallel n$
- (C)  $p \perp m$
- (D)  $p \parallel m$
- (E)  $m \perp p$

9)  $\angle 1$  and  $\angle 2$  are congruent adjacent complementary angles. Which of the following must be true? (Select all that apply!)

- (A)  $\angle 1 + \angle 2 = 90^\circ$
- (B)  $\angle 1 + \angle 2 = 180^\circ$
- (C)  $\angle 1 = 45^\circ$
- (D)  $\angle 1$  &  $\angle 2$  are a linear pair.
- (E)  $\angle 1$  and  $\angle 2$  are vertical angles.

10)  $\angle 1$  and  $\angle 2$  are vertical angles.  $\angle 3$  is supplementary to  $\angle 2$ . Which of the following must be true? (Select all that apply!)

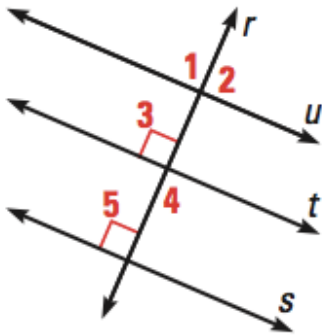
- (A)  $\angle 1 + \angle 3 = 90^\circ$
- (B)  $\angle 1 + \angle 3 = 180^\circ$
- (C)  $\angle 1 = 45^\circ$
- (D)  $\angle 1$  is congruent to  $\angle 2$
- (E)  $\angle 2$  is a right angle

11)  $\angle 1$  and  $\angle 2$  are congruent supplementary angles. Which of the following must be true? (Select all that apply!)

- (A)  $\angle 1 + \angle 2 = 90^\circ$
- (B)  $\angle 1 + \angle 2 = 180^\circ$
- (C)  $\angle 1 = 45^\circ$
- (D)  $\angle 1$  &  $\angle 2$  are a linear pair.
- (E)  $\angle 2$  is a right angle

Directions: Given the following diagram, determine which of the following statements are true. Explain your reasoning.

12)

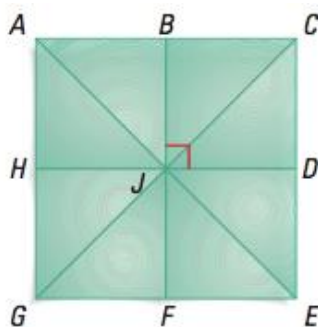


a)  $\angle 3 \cong \angle 5$

b)  $\angle 1 \cong \angle 3$

c)  $t \parallel s$

13) Origami is the Japanese art of folding pieces of paper into objects. The folds of the paper shown below are the basics for many objects. On the paper,  $\overline{BF} \perp \overline{HD}$ .



a) Are  $\angle DJE$  and  $\angle EJF$  complementary? Explain your reasoning.

b) If  $m\angle BJC = m\angle CJD$ , what are their measures?

c) Is there enough information to conclude that  $\angle AJG$  is a right angle? Explain your reasoning.