Name_____ Date_____

Math 423—Pulford Lesson 6

Using the Essentials of Geometry

1. Angle 4 and angle 5 form a linear pair. The measure of angle 4 is forty more than three times a number and the measure of angle 5 is two times that number. Find the number.

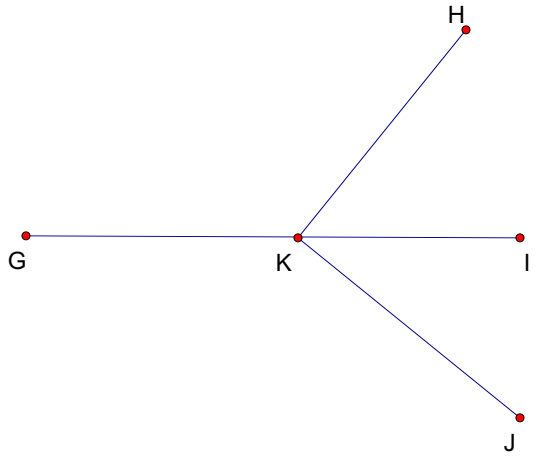
2. The measure of an angle is 40° more than the measure of its supplement. Find the measure of the angle.

3. <ABD and <DBC form a linear pair. If m<ABD = x and m<DBC = 5x – 60, find the value of m<DBC.

4. The supplement of the complement of an acute angle is always:

(1) an acute angle
(2) a right angle
(3) an obtuse angle
(4) a straight angle

In 5 – 7, given: ∠GKH and ∠HKI are a linear pair; $\overline{KH} \perp \overline{KJ}$; m∠IKJ = 34.



5. Find m∠HKI.

6. Find m∠HKG.

7. Find m∠GKJ.

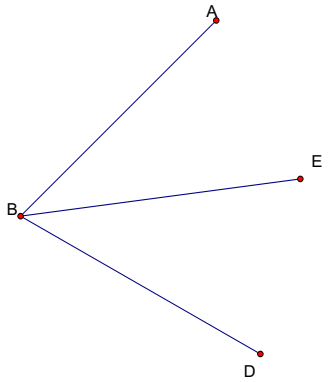
_____8. Two complementary angles have measures in the ratio 2:4. What is the measure of the *larger* angle?

(1) 60°
(2) 30°
(3) 120°
(4) 80°

_____9. Which one of the following statements is true?

(1) A line is limited in length
(2) A plane has boundaries that are lines
(3) A point has no length, width, or thickness
(4) Three points determine a line.

10. If $\overrightarrow{BE}$ bisects ∠ABD, m∠ABE = (y – 8) and m∠ABD = (5y – 100), find the value of y.



11. If line AB and line CD intersect at E. m∠AEC = 5x + 10 and m∠CEB = 3x – 30, find m∠CEB.

12. _____

Which of the following is *not* an undefined term in geometry?

1. point
2. line
3. ray
4. Plane

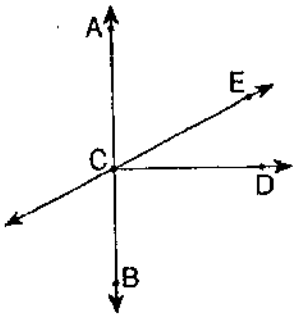
13._____

If ∠C is the complement of ∠A, and ∠S is the supplement of ∠A, which statement is *always* true?

(1) m∠C + m∠S = 180
(2) m∠C + m∠S = 90
(3) m∠C > m∠S
(4) m∠C < m∠S

14. _____

In the accompanying diagram, AB intersects $\overleftrightarrow{CE}$ and $\overrightarrow{CD} \perp \overleftrightarrow{AB}$.



Which statement is true?

(1) $\angle ACE \cong \angle BCD$.

(2) B, C, and D are collinear.

(3) $\angle ACE$ and $\angle ECD$ are complementary.

(4) $\angle ACE$ and $\angle ECD$ are supplementary.

15. _____

Which one of the following statements is *false*?

(1) A line is an undefined term in geometry.

(2) A plane has boundaries that are lines

(3) A point has no length, width, or thickness

(4) Two points determine a line.

16.

In the accompanying diagram, $m\angle ECB = 6x$, $m\angle ECD = 3x - 11$, and $m\angle DCB = 74$. What is the value of x?