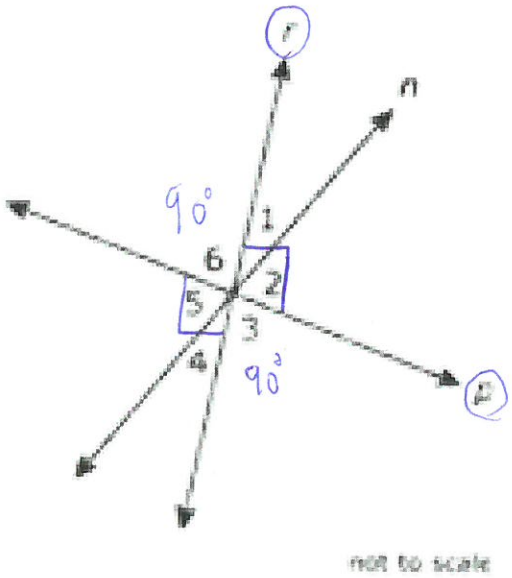
Name: AK Period:_____ Date:_____

Unit 2 Practice Test

1. The figure shows lines r, n and p intersection to form angles numbered 1, 2, 3, 4, 5, 6. Three lines lie in the same plane. Based on the figure, which of the individual statements would provide enough information to conclude that the line r is perpendicular to line p?



A. m<2 = 90°

B. m<6 = 90°

C. m<3 = m< 6

D. m<1 + m<6 = 90°

E. m<3 + m<4 = 90°

F. m<4 + m<5 = 90°

2. Write each form of the conditional statement and indicate whether each statement is true or false. If false, provide a counterexample.

If two angles form a linear pair, then they are supplementary.

Converse:

If two angles are supplementary, then they form a linear pair.
(Answers can vary, two examples below)

True False Counterexample (if false): 30°, 150°

Inverse:

If two angles do not form a linear pair, then they are not supplementary.

True False Counterexample (if false): 30°, 150°

Contrapositive:

If two angles are not supplementary, then they do not form a linear pair.

True False Counterexample (if false):_____

3. Find the next term in the pattern

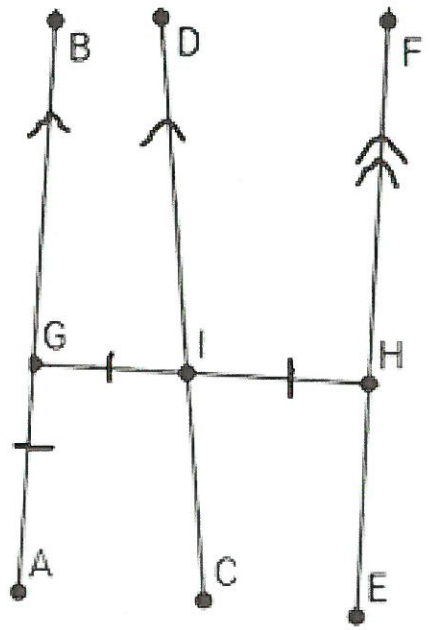
S, M, T, W, T 1, 8, 27, 64, 125

What type of reasoning did you use in the problem above? Select one.

A. Inductive B. Deductive C. Conductive D. Reductive E. Productive

4. Circle yes if you can assume each statement based on the picture on the right, and circle no if you cannot. BA, DC, FE and GH are lines. "||" means "is parallel to".

2AG = GH	Yes	No
G is a midpoint	Yes	No
I is a midpoint	Yes	No
A, C, E are collinear	Yes	No
C, I, D are collinear	Yes	No
<GID and <DIH are supplementary	Yes	No
m<GID = m<HIC	Yes	No
AB || FE	Yes	No
AB || DC	Yes	No
Line AB is perpendicular to line GH	Yes	No



4. Solve for x and write an algebraic proof for 9x – 10 = 5x + 2(3x – 5).

Given

$9x - 10 = 5x + 6x - 10$ Distributive Prop.

$9x - 10 = 11x - 10$ Combine Like Terms

$-2x \quad -2x$

$-10 = 2x - 10$ Subtraction POE

$+10 \quad +10$

$0 = 2x$ Addition POE

$0 = x$ Division POE

$x = 0$ Symmetric Property.

5. Solve for x and y using any algebraic method.

$3(5x - 2y = 6)$
$-5(3x - 5y = -23)$

$15x - 6y = 18$
$-15x + 25y = 115$

$19y = 133$
$y = 7$

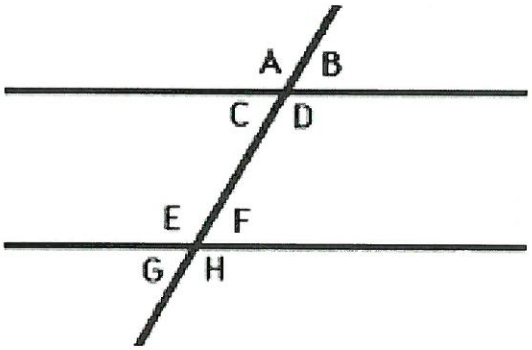
$5x - 14 = 6$
$5x = 20$
$x = 4$

$(4, 7)$

6. Use the picture for (a) and (b). Circle all the words that can be used to describe the given angles.

(a) Angle A and Angle D

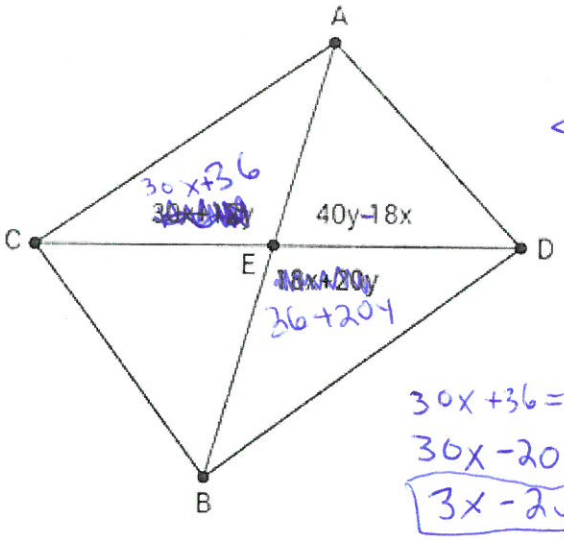
Linear Pair	Vertical Angles	Congruent
Supplementary	Adjacent	Acute
Perpendicular	Obtuse	Complementary



(b) Angle E and Angle F

Linear Pair	Vertical Angles	Congruent	Supplementary	Adjacent
Acute	Perpendicular	Obtuse	Complementary	Coplanar

7. Given the picture of the two intersecting lines and expression for the measures of angles CEA, AED and DEB in degrees, find the measure of the three indicated angles.



$30x + 36 = 36 + 20y$
$30x - 20y = 0$
$3x - 2y = 0$

$30x + 36 + 40y - 18x = 180$
$12x + 40y = 144$
$3x + 10y = 36$

$x(-1)$

$-3x + 2y = 0$
$12y = 36$
$y = 3$

$3x - 2(3) = 0$
$x = 2$

$2, 3$

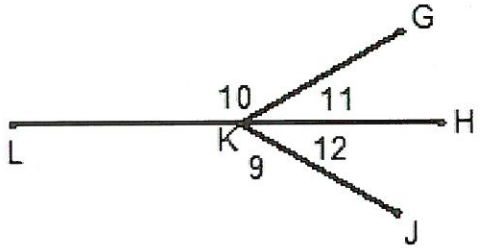
8. Find the midpoint and length of segment B(-12, 6) and C(-3, -4).

$(-7.5, 1)$

$\sqrt{181} \approx 13.5$

9. Fill in the blanks for the proof.

Given: KH bisects <GKJ
Prove: m<9 = m<10



Statements	Reasons
KH bisects ∠GKJ	Given
m∠11 = m∠12	Definition of an Angle Bisector
<9 and <12 are a linear pair <10 and <11 are a linear pair	Definition of a Linear Pair
m<9 + m<12 = 180 m<10 + m<11 = 180	Linear Pair Postulate
m∠9 + m∠12 = m∠10 + m∠11	Transitive Property
m<9 + m<12 = m<10 + m<12	Substitution
m∠9 = m∠10	Subtraction POE

Given: B is the midpoint of segment AC
C is the midpoint of segment BD
Prove: AB = CD

Statements	Reasons
B is the midpoint of $\overline{AC}$	Given
C is the midpoint of $\overline{BD}$	Given
AB = BC	Definition of a midpoint
BC = CD	Definition of a midpoint
BC = BC	Reflexive Property
AB = CD	Substitution