Geometry Semester 1 Review Name:

Unit 1 – Essential Geometry

1. For each of the geometric statements below, write in words what the statement is representing and then draw a picture of the geometric statement.

Geometric Statement	What is this saying?	Draw a picture
$\overrightarrow{PQ}$		
$\overleftrightarrow{AB}$		
$l \parallel m$		
$j \perp k$		
$\angle PRS$		
$\bullet Z$		
$< FHS \cong < DHS$		

2. Draw and use the proper markings to show the following:

a) The perpendicular bisector of a segment.

b) The angle bisector of an angle.

c) The midpoint of a segment.

3. Recall angle pairs. Answer each question and **draw a sketch** of each pair of angles below.

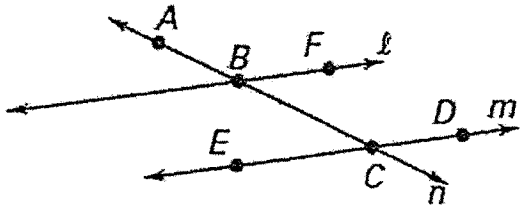
a) What is the relationship between vertical angles?

b) What is the relationship between angles that form a linear pair?

c) What are complementary angles?

d) What are supplementary angles?

e) Use the figure to the right to name two pairs of opposite rays.

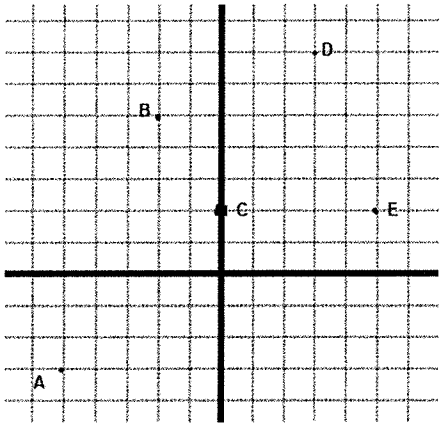


f) Use the figure to the right to name 3 collinear points.

g) Points B and E are _____

4. Find the distance between the point (7,5) and the point (9, -1). Then find the midpoint.

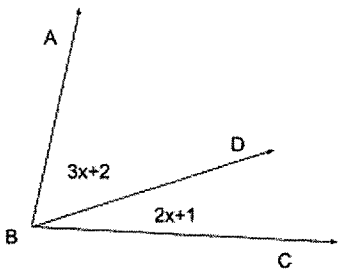
5. Use the figure to right.
a) A car travels from A to B and then to E. What is the total distance?



b) If F is the midpoint of DC, where is the location of F?

6. If BD=74, BC=2x+7, and CD=4x+1, find x. Then find BC and CD.

7. If m∠ABC = 63°, find x. Then find If m<ABC is 83°, determine m∠ABD and m∠DBC.



8. Complete the following proofs using a 2 column proof:

a) Given: $4(x+3)=52$

Prove: $x=10$

b) If <A and <B are complementary, and <C and <B are complementary, which of the following can represent measures of <A and <C?

a) $m\angle A = 30°, m\angle C = 60°$

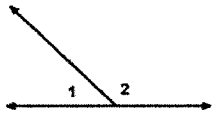
b) $m\angle A = 50°, m\angle C = 50°$

c) $m\angle A = 120°, m\angle C = 60°$

9. Given: $\angle 1$ and $\angle 2$ are supplementary

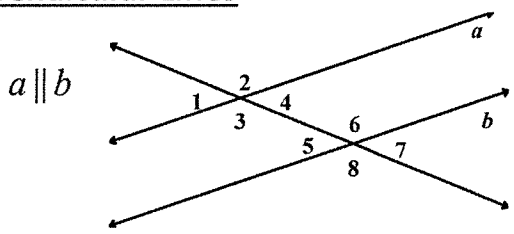
$m\angle 2 = 145°$

Prove: $m\angle 1 = 35°$



Unit 2 – Properties of Parallel and Perpendicular Lines

Use the following diagram for questions 10 – 21.



10. Name all the pairs of vertical angles.

11. Name all the pairs of same-side interior angles.

12. Name all the alternate interior angles.

13. Name all the corresponding angles.

14. Name all same-side exterior angles.

15. Name all alternate exterior angles.

16. Name 4 linear pairs.

17. Which of the above types of angles are congruent? Which of the above type are supplementary?

18. Complete the following proof:

Given: $a \| b$

Prove: $m\angle 1 + m\angle 8 = 180°$

Statements	Justifications
1.	1.
2. $m\angle 5 + m\angle 8 = 180°$	2.
3.	3. Corresponding angles of parallel lines are congruent
4.	4.

19. Complete the following proof:

Given: $a \| b$

Prove: $m\angle 3 \cong m\angle 6$

Statements	Justifications

20. If $m < 1 = 7x - 20$ and $m < 5 = 3x + 8$, solve for x and find $m < 1$ and $m < 5$.

21. If $m < 7 = 2x - 1$ and $m < 2 = 9x + 16$, solve for x and find $m < 7$ and $m < 2$.

22. Given a//b and c//d Prove <6 ≅<16