APPENDIX – F
First Draft of the Diagnostic Test

Diagnostic Test

Name of the Student:_____ Date: _____

Name of the School: _____

Note: - Read the questions properly.

I. Group the following as defined & undefined terms:

Point, Line, Line-Segment, Ray

Defined terms -

Undefined terms -

II. Define the following terms:

Collinear Points -

Non-Collinear Points -

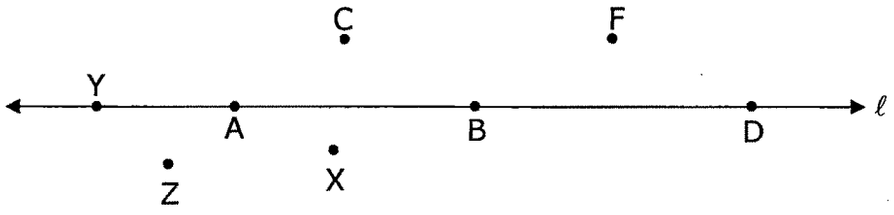
Co-Planar Points -

Non-Coplanar Points -

Opposite Rays –

Angle -

III. Observe the figure and select the most appropriate symbol to make the statement correct with reference to the given figure:



Symbols: $\in$, $\notin$, $\subset$, $=$, $\neq$

1. X____ ℓ	2. Y____ ℓ	3. A____ ℓ	4. F____ ℓ
5. $\overline{YB}$ ____ ℓ	6. $\overline{AB}$ ____ ℓ	7. $\overleftrightarrow{BD}$ ____ ℓ	8. $\overleftrightarrow{AB}$ ____ ℓ
9. $\overline{BD}$ ___ $\overrightarrow{AB}$	10. B ___ $\overrightarrow{YA}$	11. $\overline{AB}$ ___ $\overleftrightarrow{AB}$	12. $\overleftrightarrow{XZ}$ ___ ℓ
13. $\overrightarrow{YB}$ ___ ℓ	14. C____ $\overrightarrow{AB}$	15. A____ $\overrightarrow{AD}$	16. X___ $\overleftrightarrow{ZX}$
17. Z____C	18. $\overline{BD}$ ____ ℓ	19. $\overline{BD}$ ___ $\overleftrightarrow{BD}$	20. Z___ $\overleftrightarrow{YD}$
21. $\overrightarrow{AB}$ ____ ℓ	22. $\overrightarrow{AB}$ ___ $\overrightarrow{AD}$	23. D____ $\overrightarrow{AB}$	24. A___ $\overrightarrow{AD}$
25. A____ $\overline{BD}$	26. $\overrightarrow{BA}$ ___ $\overrightarrow{AB}$	27. $\overline{AB}$ ___ $\overleftrightarrow{AB}$	28. $\overline{BD}$ ___ $\overrightarrow{AB}$
29. $\overrightarrow{AD}$ ___ $\overrightarrow{BD}$	30. $\overrightarrow{BA}$ ___ $\overrightarrow{BY}$	31. $\overrightarrow{DA}$ ___ $\overrightarrow{BA}$	32. $\overrightarrow{BD}$ __ $\overrightarrow{AD}$

IV. Draw a figure representing the following situations:

1. Three distinct lines ℓ_1, ℓ_2 & ℓ_3

2. $\overleftrightarrow{AB} = \overleftrightarrow{CD}$

3. $\ell_1 \cap \ell_2 = \phi$

4. $\ell_1 = \overleftrightarrow{AB}$

5. $X \in \ell$ & $Y \notin \ell$

6. X, Y, Z are three distinct non-collinear points

7. A, B, C are three distinct collinear points

8. $\ell_2 \cap \ell_1 = \{X\}$

9. $\overline{AB} \subset \ell$

10. $\overline{AB} \cap \ell = \overline{AB}$

11. $\overleftrightarrow{AB} \cap \overleftrightarrow{XY} = \overleftrightarrow{AB}$

12. $\overline{AB} \cap \overline{CD} = \phi$

13. $\overline{XY} \cap \overline{YZ} = \{Y\}$

14. $\overline{XY} \cap \overline{YZ} = \overline{YZ}$

15. $\overrightarrow{AO}$

16. $\overline{AB} \cap \overrightarrow{BO} = \{B\}$

17. $\overrightarrow{AB} \cap \overrightarrow{AC} = \{A\}$

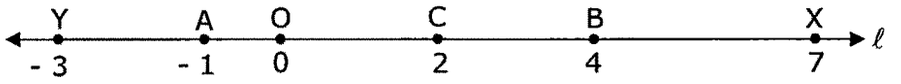
18. $\overrightarrow{AB} \cap \overrightarrow{AD} = \overrightarrow{AB}$

19. $\overrightarrow{AB} \subset \ell$

20. $\overrightarrow{XY} \cap \overrightarrow{AB} = \phi$

21. A-C-D-B

V. Answer the following questions based on the figure below:



1. What is AB? Ans. _____
2. What is YC? Ans. _____
3. What is AX? Ans. _____
4. What is CX? Ans. _____
5. What is AY? Ans. _____
6. Which are the points in the positive direction of line ℓ?
   Ans. _____
7. Which art the points in the negative direction of line ℓ?
   Ans. _____
8. Which is the origin of line ℓ? Ans. _____
9. Which is the mid-point of $\overline{OB}$? Ans. _____
10. What will be the number corresponding to the mid-point of $\overline{CX}$? Ans. _____
11. What will be the number corresponding to the mid-point of $\overline{CY}$? Ans. _____
12. Which are the congruent line-segments to $\overline{YA}$?
    Ans. _____
13. Which is the congruent line-segment to $\overline{AO}$?
    Ans. _____
14. Which point is equidistant from X & Y?
    Ans. _____

VI. Answer the following questions:

1. Represent $\overline{AB}$ in a set form?
   Ans.

2. Represent $\overrightarrow{AB}$ in a set form?
   Ans.

3. Line-segment has how many end-points?

Ans.

4. Line has how many end points?
   Ans.

5. Ray has how many end-points?
   Ans.

6. How many planes pass through one point?
   Ans.

7. How many lines pass through two distinct points?
   Ans.

8. How many lines pass through one point?
   Ans.

9. How many planes pass through two distinct points?
   Ans.

10. How many planes pass through three distinct points?
    Ans.

11. How many distinct points determine a line?
    Ans.

12. How many distinct points determine a plane?
    Ans.

13. Into how many parts does a line divide the plane?
    Ans.

14. What is the intersection of two distinct lines?

Ans.

15. Does line have a bisector?

Ans.

16. A line-segment has how many mid-points?

Ans.

17. How many distinct lines determine a plane?

Ans.

18. What is the intersection of two distinct planes?

Ans.

19. When will two rays be opposite to each other?

Ans.

20. How many arms does an angle have?

Ans.

21. How many vertices does an angle have?

Ans.

22. How many bisectors does an angle have?

Ans.

23. Are supplementary angles congruent?

Ans.

24. Are vertically opposite angles congruent?

Ans.

25. Do adjacent angles always form a linear pair of angles?

Ans.

26. Is linear pair of angles adjacent?

Ans.

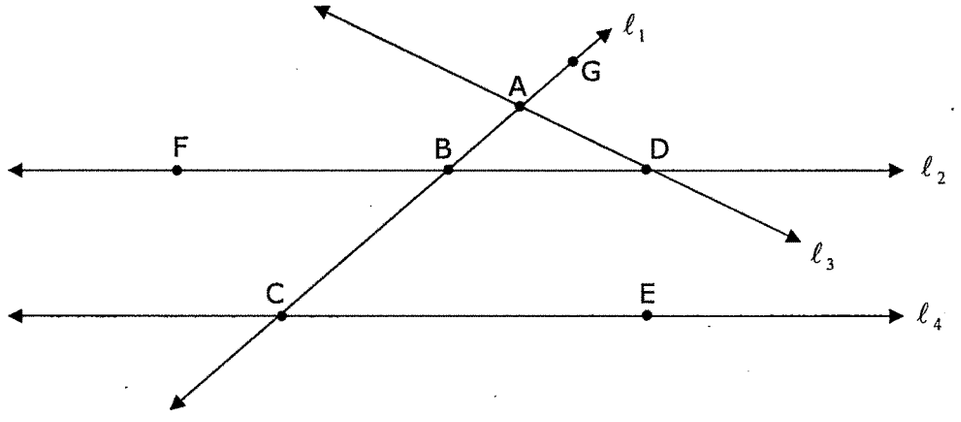
27. Are complementary angles adjacent?

Ans.

28. Is linear pair of angles congruent?

Ans.

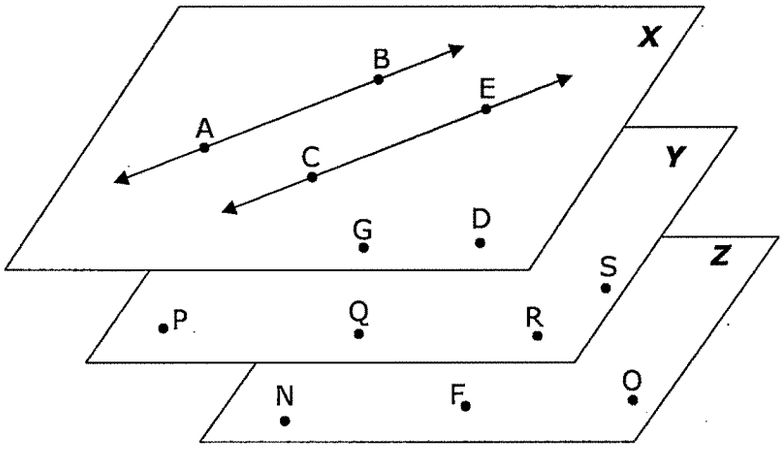
VII. Answer the following questions based on the figure below:



1. $\overrightarrow{AD} \cap \overrightarrow{AB}$ = _____
2. $\overrightarrow{BC} \cap \overrightarrow{DA}$ = _____
3. $\ell_2 \cap \ell_4$ = _____
4. $\overline{CB} \cap \overline{CA}$ = _____
5. $\overline{CB} \cap \overline{DA}$ = _____
6. $\ell_2 \cap \ell_3$ = _____
7. $\overrightarrow{BC} \cap \overrightarrow{DA}$ = _____
8. $\overrightarrow{AG} \cap \overrightarrow{CB}$ = _____
9. $\overrightarrow{BD} \cap \overrightarrow{FD}$
10. $\overrightarrow{AG} \cap \overrightarrow{BC}$ = _____
11. $\overrightarrow{CE} \cap \ell_4$ = _____
12. $\overline{CB} \cap \overline{BA}$ = _____
13. $\overline{FB} \cap \overline{BA}$ = _____
14. $\overline{FB} \cap \ell_2$ = _____
15. $\overrightarrow{BD} \cap \overrightarrow{FD}$ = _____
16. $\overrightarrow{BD} \cap \overrightarrow{BF}$ = _____
17. $\overrightarrow{CE} \cap \overrightarrow{BC}$ = _____
18. $\overrightarrow{DA} \cap \overrightarrow{CE}$ = _____

VIII. Answer the following questions based on the figure below:

In the figure X, Y & Z are 3 parallel planes.



1. Which points are coplanar with respect to plane *X*?
Ans.

2. Which points are coplanar with respect to plane *Y*?
Ans.

3. Which points are coplanar with respect to plane *Z*?
Ans.

4. List the points that are coplanar to the point R.
Ans.

5. Are $\overleftrightarrow{AB}$ & $\overleftrightarrow{CE}$ parallel?
Ans.

6. Are $\overleftrightarrow{AB}$ & $\overleftrightarrow{PQ}$ parallel?
Ans.

7. Are $\overleftrightarrow{QS}$ & $\overleftrightarrow{FG}$ parallel?
Ans.

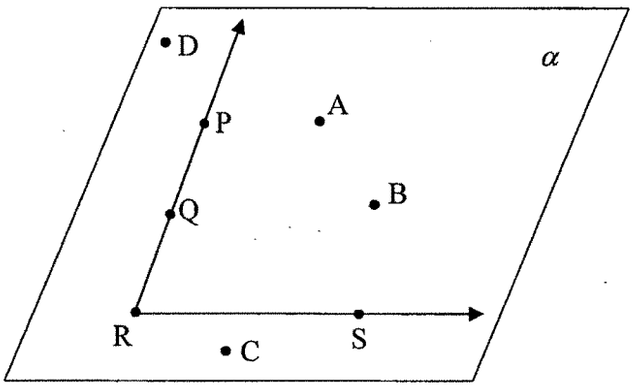
8. Mention all the points lying in the same half planes with respect to $\overleftrightarrow{CE}$?
Ans.

9. What is the relation between $\overleftrightarrow{CE}$ & plane *X*?
Ans.

10. Are lines $\overleftrightarrow{AB}$ and $\overleftrightarrow{GD}$ coplanar?
Ans.

11. Are lines $\overleftrightarrow{AB}$ and $\overleftrightarrow{CE}$ coplanar?
Ans.

IX [A]. Look at the following figure below and answer the following questions:

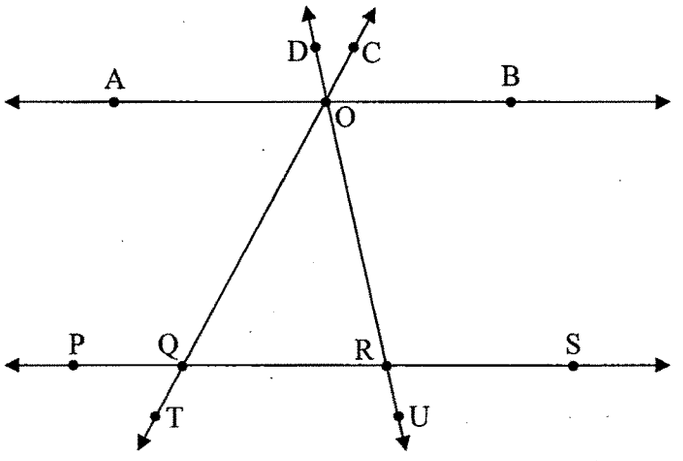


1. Name the arms of $\angle QRS$ Ans. _____
2. List the points lying in the interior of $\angle PRS$ Ans. _____
3. List the points lying in the exterior of $\angle PRS$ Ans. _____
4. List the points lying on the angle $\angle QRS$ Ans. _____
5. Are angles $\angle QRS$ & $\angle PRS$ same? Ans. _____
6. Are angles $\angle PRS$ & $\angle PRC$ same? Ans. _____
7. How many partitions of the plane are made by an angle $\angle QRS$?
   Ans. _____
8. Will the ray $\overrightarrow{RD}$ intersect $\overline{PS}$? Ans. _____
9. Will the ray $\overrightarrow{RA}$ intersect $\overline{PS}$? Ans. _____
10. Will the ray $\overrightarrow{RS}$ intersect $\overline{PS}$? Ans. _____

IX [B]. Fill up the table below having the arms & vertices of the corresponding angles.

Sr. No.	Angles	Arms	Vertex
1.	$\angle DEF$		
2.		$\overrightarrow{PQ}, \overrightarrow{PR}$	
3.		$\overrightarrow{AO}, \overrightarrow{AB}$	
4.	$\angle XOY$		O
5.		$\overrightarrow{CA}, \overrightarrow{CB}$	

X. Refer the figure below and select appropriate option(s) for the given pair of angles (Put a mark '✓' in the table against the selected options)



Sr. No.	Pairs of Angles	Complementary Angles	Supplementary Angles	Adjacent Angles	Linear Pair of Angles	Vertically Opposite Angles	No Relation
1.	$\angle DOA, \angle DOC$						
2.	$\angle PQT, \angle TQR$						
3.	$\angle DOC, \angle COB$						
4.	$\angle PQT, \angle OQR$						
5.	$\angle ORS, \angle ORQ$						
6.	$\angle URP, \angle URS$						
7.	$\angle DOC, \angle QOR$						
8.	$\angle OQR, \angle OQP$						
9.	$\angle QOR, \angle ROB$						
10.	$\angle QOR, \angle COB$						
11.	$\angle ORS, \angle PRU$						

XI. Answer the following questions based on the same figure above:

1. Which type of angle is $\angle COB$? Ans. _____
2. Which type of angle is $\angle OQP$? Ans. _____
3. Which type of angle is $\angle OQR$? Ans. _____
4. Which type of angle is $\angle ORS$? Ans. _____
5. Which type of angle is $\angle ROA$? Ans. _____
6. Which type of angle is $\angle COA$? Ans. _____
7. Which type of angle is $\angle QOA$? Ans. _____