Geometry Test - Unit 1
Points, Lines, Planes and Angles

Definitions (1 - 4)
1) Segment

2) Opposite rays

3) Congruent

4) Supplementary angles

5) In \( \angle XYZ \), the sides are _________ named _____ and ______.

6) Name the three “undefined” terms that are the basis of Geometry.

7) Write the meaning of the symbol \( \overrightarrow{JK} \) in word form.

8) Write the Angle Addition Postulate.

9) Write the Slope Formula.
10) Name a linear pair. Linear pairs are ______________.

![Diagram of intersecting lines with labels 1, 2, 3, 4]

11) Find the coordinates of the midpoint of a segment with $C(1, 5)$ and $D(3, -3)$ as endpoints.

12) The midpoint of $\overline{AB}$ is $M(-1, 5)$. One endpoint, $A$, is at $(-4, 4)$. Find the coordinate of the other endpoint, $B$.

13) If the $m\angle ABC = 72^\circ$ and $\overline{BD}$ bisects $\angle ABC$, find $m\angle ABD$.

14) Find the value of $x$ if $\overline{UX}$ is the angle bisector of $\angle SUV$.

![Diagram of angle bisector with expressions for $\angle SUV$]
15) If \( m \angle A = 25^\circ \), find the value of \( x \), if its supplement is given by \((7x + 15)^\circ\).

16) Given the linear pair, find the value of \( x \).

\[
(2x + 15)^\circ (3x + 25)^\circ
\]

17) \( B \) is between \( A \) and \( C \) on \( AC \), \( AB = (4n - 9) \), \( BC = (4 + n) \), and \( AC = 35 \). Find the value of \( n \).

18) Find the distance between \((2, 3)\) and \((5, 1)\).

19) If two points lie in a plane, then the line joining them is ____________________________.

20) Bisect the given segment.
21. Use the diagram.

Which best describes the pair of angles $\angle 3$ and $\angle 4$?

A. complementary  
B. linear pair  
C. supplementary  
D. vertical

22. Use the diagram.

Which best describes the pair of angles $\angle 2$ and $\angle 5$?

A. vertical  
B. supplementary  
C. linear pair  
D. adjacent

23. In the diagram, $Y$ is between $X$ and $Z$, and $XZ = 45\text{ cm}$.

What is the length of $YZ$?

A. 5 cm  
B. 10 cm  
C. 20 cm  
D. 25 cm
24. In the diagram, \( m\angle ABC = 44^\circ \).

![Diagram of angles and points]

What is the value of \( x \)?

A. 3  
B. 4  
C. 6  
D. 7

25. What is the distance between points \( A(-2, 1) \) and \( B(1, 5) \)?

A. 5  
B. 25  
C. \( \sqrt{5} \)  
D. \( \sqrt{37} \)

26. What are the coordinates of the midpoint of the segment joining the points \( A(-3, 2) \) and \( B(4, -4) \)?

A. \( \left( \frac{1}{2}, -3 \right) \)  
B. \( \left( \frac{1}{2}, -1 \right) \)  
C. \( (1, -6) \)  
D. \( (1, -2) \)

27. \( \triangle ABC \) is constructed with vertices \( A(3, -4) \), \( B(-1, 1) \), and \( C(-7, 5) \). What is the length of \( AC \)?

A. \( \sqrt{19} \)  
B. \( \sqrt{77} \)  
C. \( \sqrt{101} \)  
D. \( \sqrt{181} \)
28. There are two routes that may be used to drive from Ashton’s house to Catherine’s house. The routes are described below.

Route 1: Drive 3 miles south and 2 miles east.

Route 2: Drive the straight road that goes directly from the school to Catherine’s house.

How much longer is route 1 than route 2?