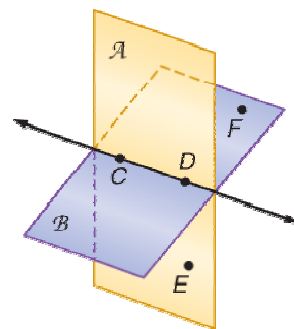


Lesson 3-1

Example 1

Which postulate justifies the answer to each question?

- Name three points that determine plane B .
- Name the intersection of planes A and B .

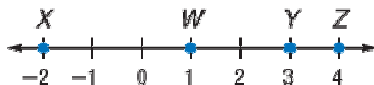


Solution

- According to Postulate 2, three noncollinear points determine a plane. Three points that determine plane B are points C , D , and F .
- According to Postulate 4, the intersection of two planes is a line. Planes A and B intersect in line CD (\overline{CD}).

Example 2

Use the number line, find the length of \overline{XY} .



Solution

The coordinate of point X is -2 . The coordinate of point Y is 3 .

$$|-2 - 3| = |-5| = 5 \quad \text{or} \quad |3 - (-2)| = |5| = 5$$

So, the distance between points X and Y is 5 .

This means that the length of \overline{XY} is 5 or $XY = 5$.

Example 3

In the figure at the right, $XY = 28$.
Find XW .

**Solution**

From the figure, $XW = 2n - 1$ and $WY = n + 8$. You are given $XY = 28$. Use the segment addition postulate to write and solve an equation.

$$\begin{aligned}XW + WY &= XY \\2n - 1 + n + 8 &= 28 && \text{Combine like terms.} \\3n + 7 &= 28 && \text{Subtract 7 from each side.} \\3n &= 21 && \text{Divide each side by 3.} \\n &= 7\end{aligned}$$

The value of n is 7. To find XW , replace n with 7 in $2n - 1$.

$$XW = 2n - 1 = 2(7) - 1 = 13$$