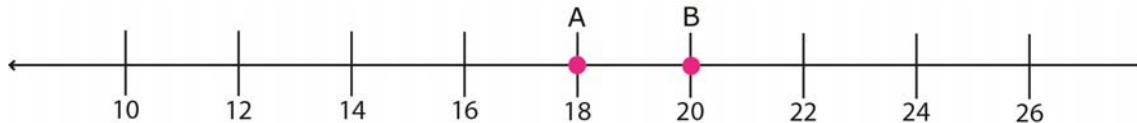## Finding Midpoints - Guided Lesson Explanation
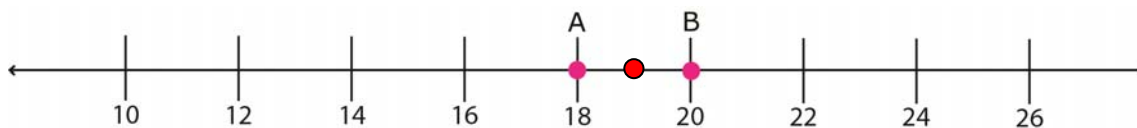
Explanation#1

If the coordinate of Y is x_1 and the coordinate of Z is x_2, then the coordinate of the midpoint of YZ is $\frac{x1+x2}{2}$.

We have find the coordinates of A and B on the number line.

The coordinate of A is 18 and the coordinate of B is 20. So the coordinate of the midpoint is $\overline{AB}$ is $\frac{18+20}{2} = \frac{38}{2} = 19$

If we have plot the midpoint on the number line, you can see that if the halfway between A and B.

Explanation#2

The of midpoint formula is

$$M = \left(\frac{x1+x2}{2}, \frac{y1+y2}{2}\right)$$

Where M is the midpoint of a line segment with endpoint at (x1,y1) and (x_2, y_2).

Step 3) Use the midpoint formula to find the midpoint M. Plug in A (5, 7) for (x_1, x_2) and B (-6, -4) for (x_2, y_2).
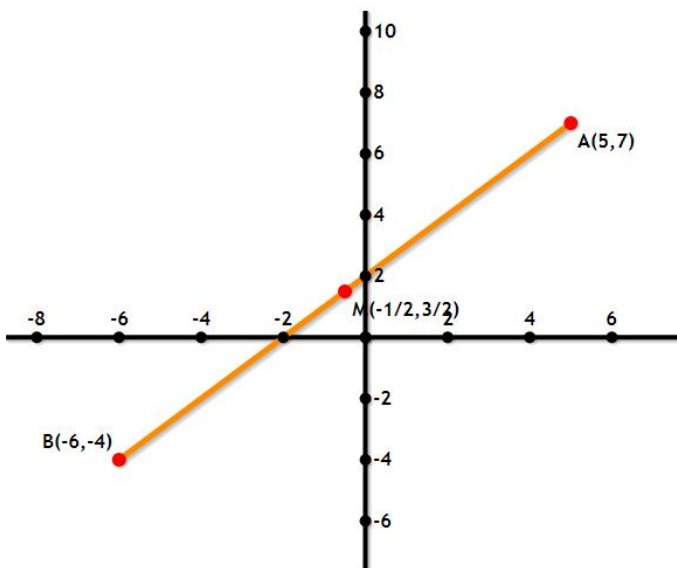
$$M = \left(\frac{x1+x2}{2}, \frac{y1+y2}{2}\right)$$

$$M = \left(\frac{5 + -6}{2}, \frac{7 + -4}{2}\right)$$

$$M = \left(\frac{5 + -6}{2}, \frac{7 + -4}{2}\right)$$
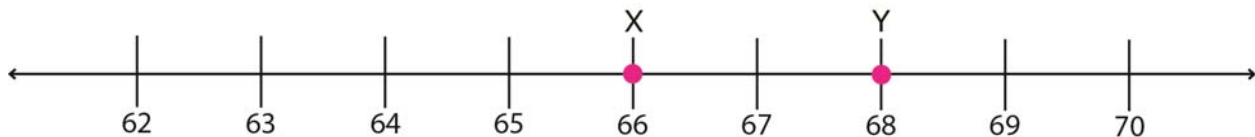
$$M = \left(\frac{-1}{2}, \frac{3}{2}\right)$$

M = (-1/5, 3/2) or (-.5, 1.5)

Explanation#3

If the coordinate of Y is x_1 and the coordinate of Z is x_2, then the coordinate of the midpoint of YZ is $\frac{x1+x2}{2}$.

We have find the coordinates of X and Y on the number line.

The coordinate of X is 66 and the coordinate of Y is 68. So the coordinate of the midpoint is $\overline{XY}$ is $\frac{66 + 68}{2} = \frac{134}{2} = 67$

If we have plot the midpoint on the number line, you can see that if the halfway between X and Y.