# What is a Line?

an infinitely-extending one-dimensional figure that does not curve

*k*

Line $k$

$\overleftrightarrow{AB}$ or $\overleftrightarrow{BA}$

*A*

*B*

Straight path

Has no thickness

Extends forever

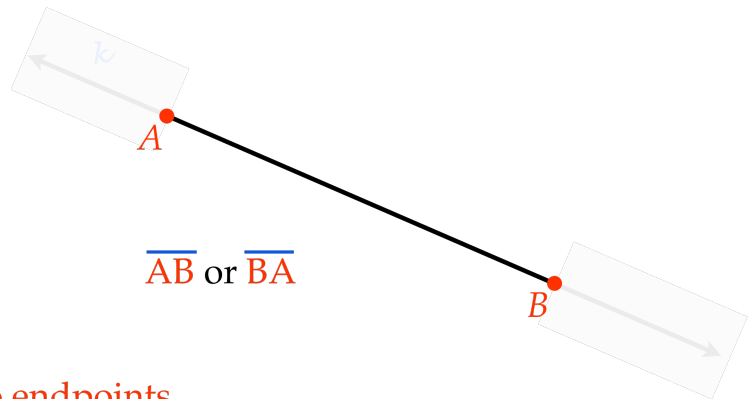Name Lines with a lowercase letter or two points on the line.
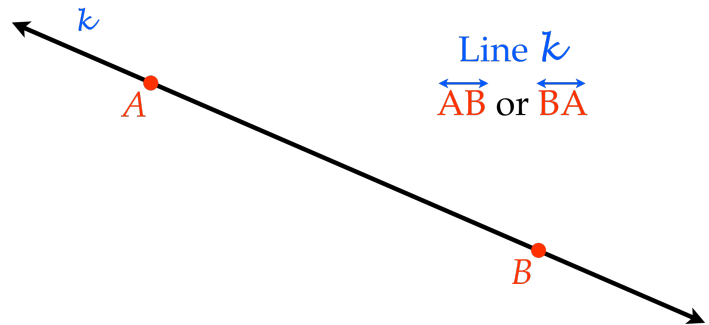
# What is a Line Segment?

A part of a line that consists of two points, called endpoints.

*k*

*A*

*B*

Straight path

Has no thickness

$\overline{AB}$ or $\overline{BA}$

Has a finite length

Segments named by two endpoints

# Distance

How do we measure the distance between two points on a line segment?

A •————————————————————————————————————• B

# Distance

```
 A                                    B
<—+——+——+——+——+——+——+——+——+——+——+——+——+——+——+——+——+——+—>
 -9 -8 -7 -6 -5 -4 -3 -2 -1  0  1  2  3  4  5  6  7  8  9
```
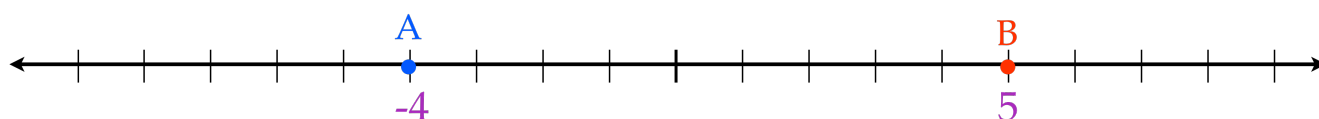
The distance between two points is the absolute
value of the difference of their coordinates.

Distance between A and B:      |-4 − 5| or |5 − (-4)|

$$= 9$$

# Distance

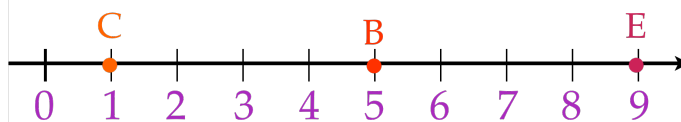How do we measure the distance between two points on a line segment?



A
-4

B
5

| Distance | The length | AB |
|----------|-----------|-----|
| between A and B | of $\overline{AB}$ | |
| = 9 | = 9 | = 9 |

All are the same thing.

## Congruent Segments



C    B    E
0  1  2  3  4  5  6  7  8  9

If two segments have the same length, they are congruent.

CB = 4          BE = 4

$\overline{CB}$ and $\overline{BE}$ are congruent segments.

$\overline{CB} \cong \overline{BE}$

Definition of a Line Segment
Pg. 3