

Lesson 2
Segments

segment-

part of a line consisting of two endpoints and all points between them

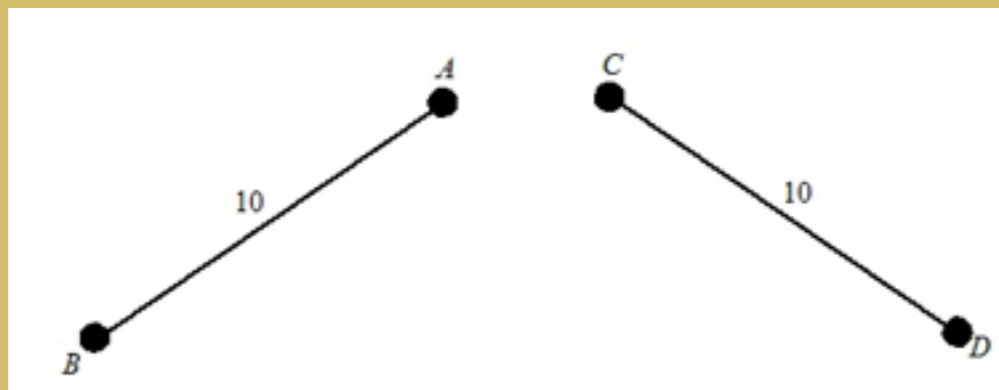


Segment AB

\overline{AB}

congruent-

objects that have the same shape and size



Reflexive Property

**A quantity is congruent (equal) to itself.
 $a = a$**

Symmetric Property

If $a = b$, then $b = a$.

Transitive Property

If $a = b$ and $b = c$, then $a = c$.

postulate-

statement accepted true without proof

Ruler Postulate

The distance between 2 points is the absolute value of the difference of their coordinates.

Examples:

Find the distance between each pair of points with the given coordinates

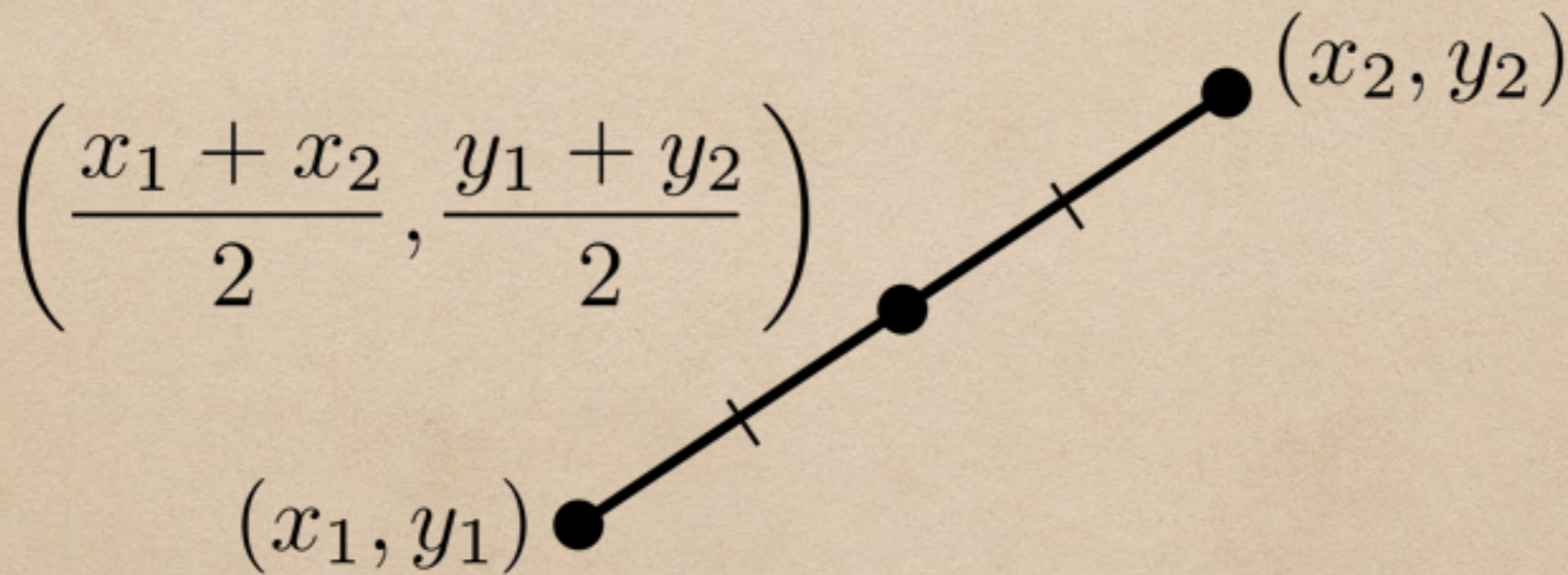
a) -15, 13

b) -13, -17

midpoint-

the point that divides the segment into two congruent parts.

Midpoint Formula



Examples:

Use the midpoint formula to find the midpoint of a line segment with the given endpoints.

a) 4 and 10

b) 1 and 27

M is the midpoint of segment AB. Find AM, MB, and AB.

c) $AM = 2x + 9$, $MB = 4x - 5$

d) $AM = 3a + 5$, $MB = 5a - 7$

e) $AM = 2x + 16$, $AB = 6x$

Segment Addition Postulate

If B is between A and C, then

$$AB + BC = AC$$

Examples:

1. Point S lies on segment RT between R and T.
RS = 12 and RT = 31 Find ST.

2. Point B lies on segment AC between A and C.
AB = $x + 2$ and BC = $x - 10$ find AC