

# Geometry

## Notes Section 1.3

### Use Midpoint and Distance Formula

#### VOCABULARY

**Midpoint:** **M;** a point that divides a segment in half.

**Segment Bisector:** a point, ray, line, line segment or plane that intersects a segment at its midpoint.

**Midpoint Formula:** **I. Number Line**

$$\frac{(\text{Endpoint} + \text{Endpoint})}{2}$$

**II. Coordinate Plane**

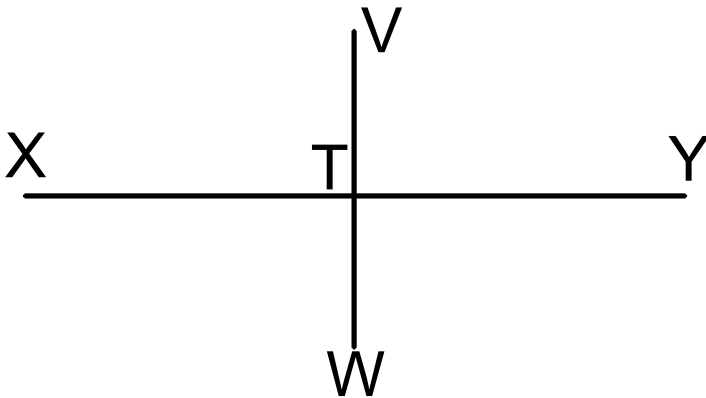
$$\left( \frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$$

**Distance Formula:**

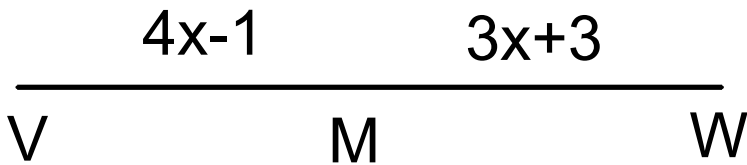
$$\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

**EXAMPLES**

1) **VW bisects XY at T, and  $XT=39.9\text{cm}$ . Find XY.**



2) **M is the midpoint of VW. Find VM.**



3a) Find the M of RS. R(1,-3) and S(4,2)

M \_\_\_\_\_

b) Find endpoint K. M(2,1) and J(1,4)

K \_\_\_\_\_

c) Find endpoint V. M(-1,-2) and W(4,4)

V \_\_\_\_\_

4a)

Find  $RS$ .

$R(2,3)$  and  $S(4,-1)$

b)

Find  $AB$ .

$A(-3,2)$  and  $B(1,-4)$