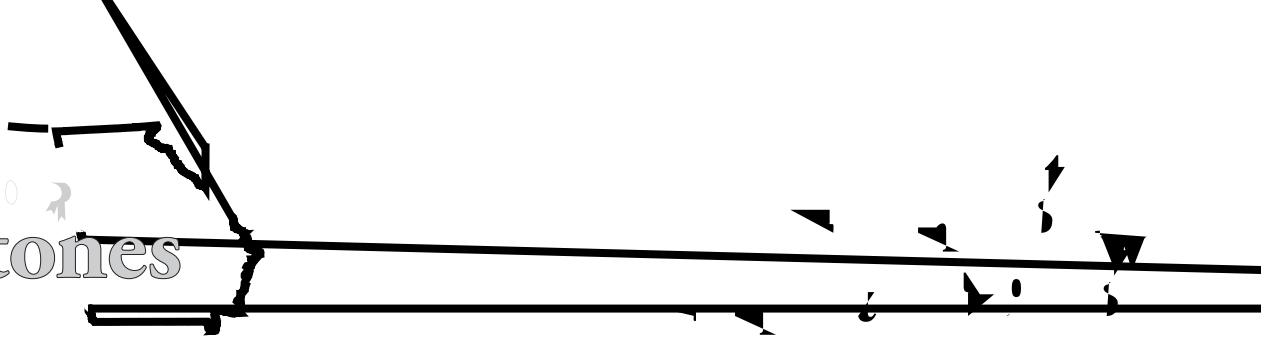
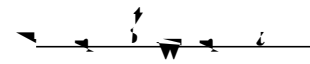


# Milestones



Distance between two points  $A(x_1, y_1)$  and  $B(x_2, y_2)$  is given by



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

Section formula: If a point  $P(x, y)$  divides the line segment  $AB$  in the ratio  $a:b$ , then the coordinates of  $P$  are

$$(x, y) = \left( \frac{bx_1 + ax_2}{b+a}, \frac{by_1 + ay_2}{b+a} \right)$$

$$(x, y) = \left( x_1 + \frac{a}{a+b}(x_2 - x_1), y_1 + \frac{a}{a+b}(y_2 - y_1) \right)$$

Section formula for internal division:

$$C = 2r$$

Section formula for external division:

$$C = 2r$$