

Chapter 7

Analytic Geometry

7.1 One-Dimensional Coordinate System

Point coordinates: $x_0, x_1, x_2, y_0, y_1, y_2$

Real number: λ

Distance between two points: d

607. Distance Between Two Points

$$d = AB = |x_2 - x_1| = |x_1 - x_2|$$



Figure 86.

608. Dividing a Line Segment in the Ratio λ

$$x_0 = \frac{x_1 + \lambda x_2}{1 + \lambda}, \quad \lambda = \frac{AC}{CB}, \quad \lambda \neq -1.$$

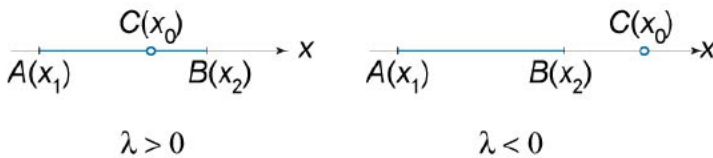


Figure 87.

609. Midpoint of a Line Segment

$$x_0 = \frac{x_1 + x_2}{2}, \quad \lambda = 1.$$