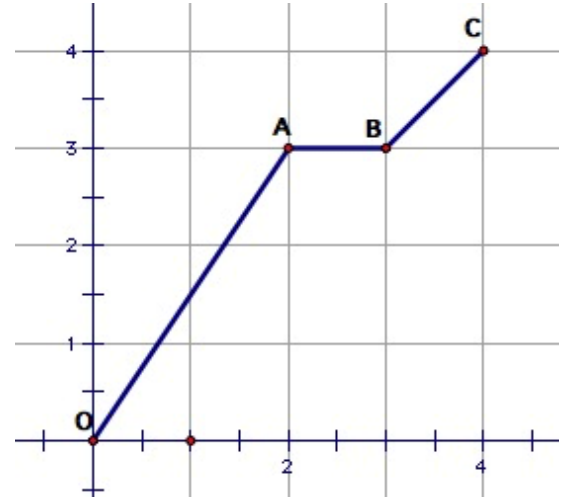


HW 6.1.1: Movement along a Polygonal Path

For this assignment, we are concerned with the movement of an object along a path in the plane. We are assuming that the plane is a coordinate plane and the object starts at the point $(0,0)$. As the object moves along the path, each point on that path has two coordinates. The coordinates depend on the distance traveled along the path. Let us call this distance s , the length of the path from the origin to a point P on the path.

1. Evaluate the following

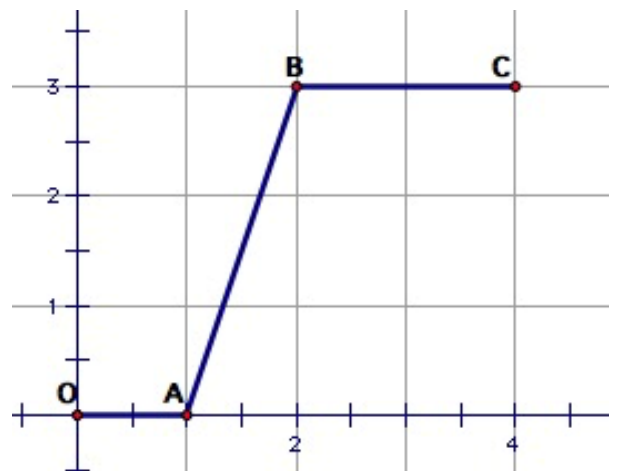
- What value of s yields the coordinate point $(2, 3)$?
- What value of s yields the coordinate point $(4, 4)$?
- $x(\sqrt{13}) =$
- $y(1 + \sqrt{13}) =$
- $x(2) =$
- $y(4) =$



(Challenge) Write explicit formulas (piecewise functions) describing the path of $x(s)$ and $y(s)$.

2. Evaluate the following:

- What value of s yields the coordinate point $(2, 3)$?
- What value of s yields the coordinate point $(4, 3)$?
- $x(1) =$
- $y(1 + \sqrt{10}) =$
- $x(2 + \sqrt{10}) =$
- $y(3 + \sqrt{10}) =$



(Challenge) Write explicit formulas (piecewise functions) describing the path of $x(s)$ and $y(s)$.

3. Evaluate the following:

a.) What value of s yields the coordinate point $(1, 3)$?

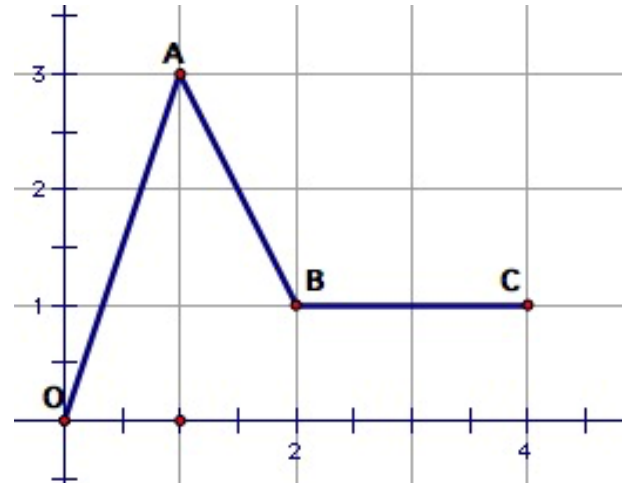
b.) What value of s yields the coordinate point $(3, 1)$?

c.) $x(\sqrt{10}) =$

d.) $y(\sqrt{10} + \sqrt{5}) =$

e.) $x(2) =$

f.) $y(2.5) =$



(Challenge) Write explicit formulas (piecewise functions) describing the path of $x(s)$ and $y(s)$.