Olympic Climbing

The objective of this activity is to view a graphical representation of the Olympic Speed Climbing route and use the distance formula and the midpoint formula to answer questions. Students also explore how the rate of change varies during a race.

During the 2021 Summer Olympics in Tokyo, competition climbing became an Olympic sport for the first time. Athletes competed in three separate disciplines: speed climbing, bouldering, and lead climbing. In **speed climbing**, two climbers race side-by-side to scale identical routes on a 15m high wall set at an angle of 95 degrees.

During one race, Alberto Lopez from Spain competed against Adam Ondra from the Czech Republic.

Find the Midpoint
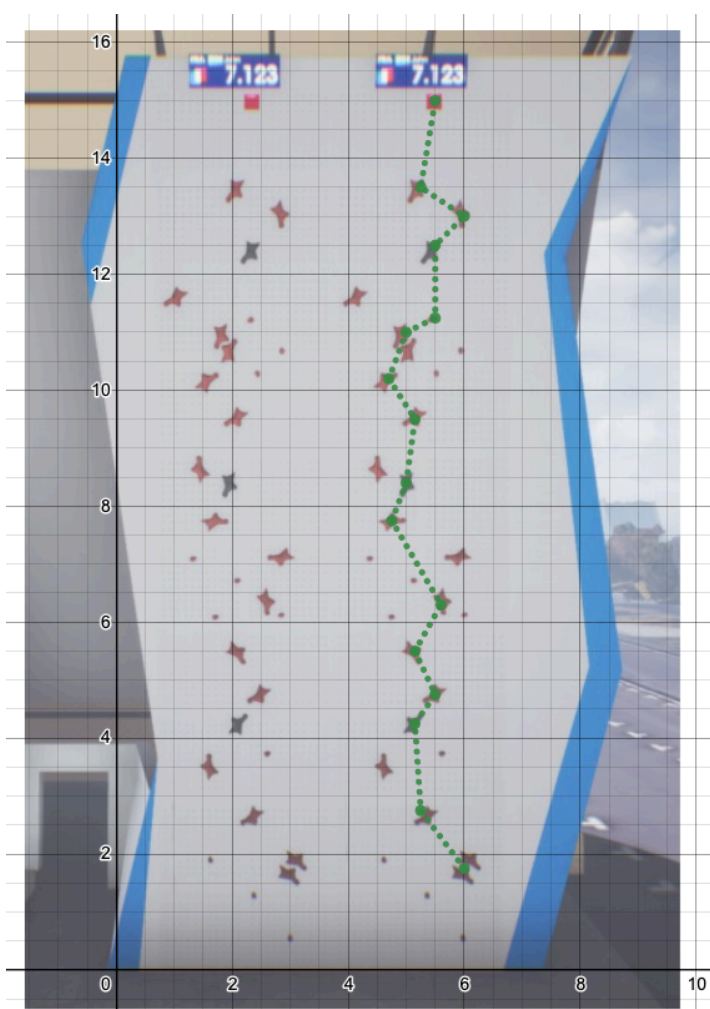

A coordinate plane has been placed over a rendering of the climbing route. The starting position for Alberto Lopez is at the point (6, 1.75) and the final position is at (5.5, 15). What are the coordinates of the midpoint between the starting and final positions?

Find the Distance

Alberto Lopez's path is marked and the coordinates of his handholds are listed in the table below along with the time in seconds.

1. Between which two holds did Lopez move the farthest? Justify your answer.

2. Determine the total distance traveled by Lopez.

3. Is Lopez climbing faster, slower, or the same speed as he nears the top? Justify your answer.

Hold	Time (s)	x	y
1	0.0	6	1.75
2	0.7	5.25	2.75
3	1.5	5.15	4.25
4	1.6	5.5	4.75
5	2.1	5.15	5.5
6	2.5	5.6	6.3
7	3.0	4.75	7.75
8	3.4	5	8.4
9	4.1	5.15	9.5
10	4.3	4.7	10.2
11	4.8	5	11
12	4.8	5.5	11.25
13	5.4	5.5	12.5
14	5.9	6	13
15	5.9	5.25	13.5
16	6.56	5.5	15