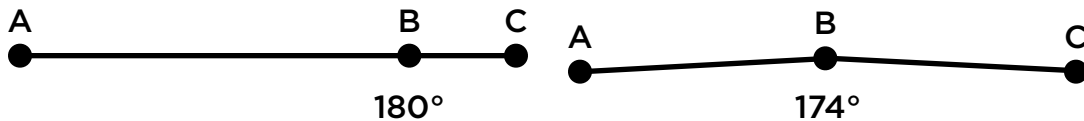


Your students will need to come up with a rule that will tell us how any attempt at finding the midpoint ranks against any other. Throughout their attempt they may use the resources provided (lengths, angles, and coordinates) but come up with a rule that doesn't hold up for every case.

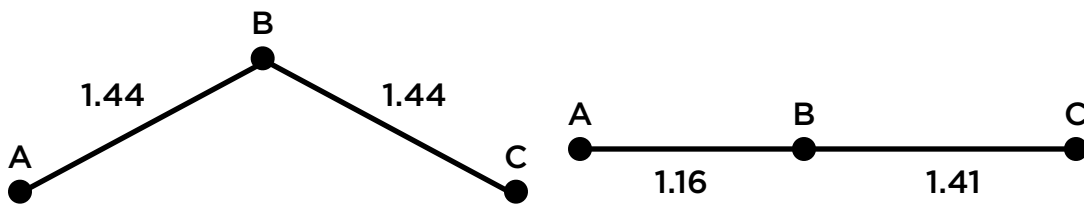
Ask them to test their rule against lots of different cases. Their rule will have to work with cases that are very large or really small. If they are still convinced their rule works, you may want to suggest cases.

For instance, if the student suggests we look for points that create 180° angles between points A and C, offer the student these example:



One has 180° but is far from the midpoint. The other has 174° but is closer to the midpoint. The goal here is to provoke the student to seek a better rule.

If the student suggests we look at the distance between the points only, offer these counter examples:



The best solution here is to use the coordinates to calculate the exact location of the midpoint and then find the distance from each contestant's point B to that midpoint. The smallest distance wins.

Rank	Name	guess		actual		distance
		x	y	x	y	
1	Andrew	-451	359	-452	362	3
1	Nathan	-426	-230	-425	-228	3
2	Timon	604	-201	599	-199	6
3	Chris	410	220	389	228	22