

Corresponding ACE Answers

Applications

- (6, 1)
 - (-6, -4)
 - (-6, 0)
- 13 blocks
- 18 blocks
- There are many 10-block routes, but there are exactly five possible halfway points: (-5, 0), (-4, -1), (-3, -2), (-2, -3), and (-1, -4).
- Because there is only one possible route, there is only one possible halfway point: (-3, -2).
- the art museum and the cemetery
 - Possible answer: To get to the art museum, drive 6 blocks east, turn left, and drive 1 block north. To get to the cemetery, drive 3 blocks east, turn right, and drive 4 blocks south.

Connections

- $8 \text{ blocks} \times 150 \text{ meters/block} = 1,200 \text{ m}$
- $12 \text{ blocks} \times 150 \text{ meters/block} = 1,800 \text{ m}$
- $750 \text{ m} \div 150 \text{ meters/block} = 5 \text{ blocks}$. City Hall and the stadium are 5 blocks, or 750 meters, apart by car. The cemetery and the animal shelter, and the art museum and the gas station, are also 5 blocks apart by car.

Extensions

- Road maps are typically partitioned into square areas by consecutive letters running along the sides of the map and consecutive numbers running along the top and bottom. This system is similar to a coordinate grid system, but the letters and numbers do not refer to points; they refer to regions. For example, anything in the top-left square might be in region A-1.
- Answers will vary. Students should include compass directions as well as distances and will need to decide where the distances are to be measured from, such as airports or city centers. For example: Starting at the airport at Grand Rapids, go south 47 mi to the airport at Kalamazoo. From Kalamazoo, go northeast 60 mi to the airport at Lansing. From Lansing, go southeast 80 mi to the airport at Detroit.
Note: You may want to point out that pilots need more exact directions than north, south, east, or west because the actual direction may be a few degrees east or west of due north.