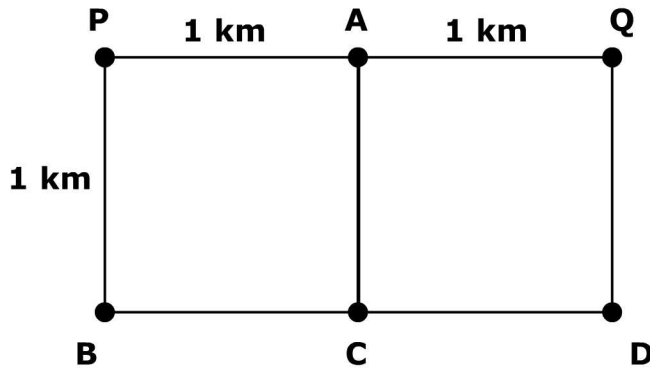


Speed Practice

Name _____

Note: The speed of sound is about 340 m/s in warm, dry air.

Two separate guns are fired at the same moment. The guns are 2 km apart and aligned on an east-west line (points P and Q on the diagram). Allen is standing exactly halfway between the guns (point A). Brian, Celeste, and Dominique are standing at other locations (points B, C, and D on the diagram). Brian is 1 km south of the gun at P. Dominique is 1 km south of the gun at Q. Celeste is midway between Brian and Dominique, 1 km south of Allen.



1. Figure out when each person hears each gun.
2. In what order is each gun heard? That is, for each gun, make a list of who hears it first, second, third, and fourth.
3. What will Brian and Dominique say when asked "Which gun was fired first?" How can they settle their dispute?
4. What will Allen and Celeste say if they overhear Brian and Dominique talking?

If this event occurred at night and each gun emits a flash of light when it is fired, when will each person see each flash? Do you think there will be any disagreements about which gun was fired first?