Connections 3

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Problem 2.9: A Ferrari is heading south at a constant speed on Broadway (a north/south street) at the same time a Mercedes is heading west on Aloha Avenue (an east/west street). The Ferrari is 624 feet north of the intersection of Broadway and Aloha, at the same time that the Mercedes is 400 feet east of the intersection. Assume the Mercedes is traveling at the constant speed of 32 miles/hour. Find the speed of the Ferrari so that a collision occurs in the intersection of Broadway and Aloha.

Research Question: Consider a point that moves in the negative-y direction at a rate of r_1 starting at the point (a, b) and another point that moves in the negative-x direction at a rate of r_2 starting at the point (c, d). What values of r_2 are reasonable to ensure that the points will never intersect?