

NAME _____

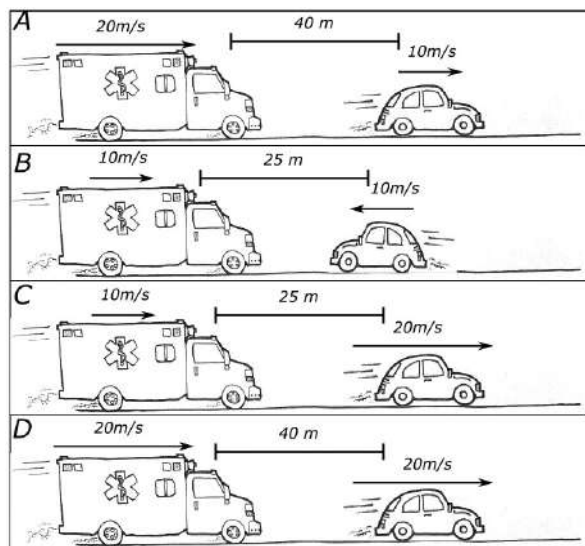
DATE _____

Scenario

An ambulance with a siren of frequency 500 Hz is traveling on the same street as a car. The velocities of the two vehicles and the distances between them are given in the images at right.

Data Analysis

PART A: Rank the frequency of the siren as measured by a passenger in the car. (Include $<$, $>$, or $=$ to clarify your ranking.)



Highest frequency _____ Lowest frequency _____

Explain your reasoning.

PART B: In which case(s) would the passenger in the car hear a *higher* pitch than the ambulance driver?

Explain your reasoning.

10.H The Doppler Effect

PART C: In which case(s) would the passenger in the car hear a *lower* pitch than the ambulance driver?

Explain your reasoning.

PART D: In which case(s) would the passenger in the car hear the *same* pitch as the ambulance driver?

Explain your reasoning.
