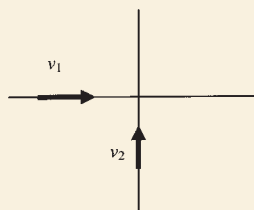


Physics Challenges for Teachers and Students

► Global Crossing

Two cars approach an intersection of two perpendicular roads as shown. The velocities of the cars are v_1 and v_2 . At the moment when car 1 reaches the intersection, the separation between the cars is d . What is the minimum separation between the cars during this motion?

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► Home, Sweet Home

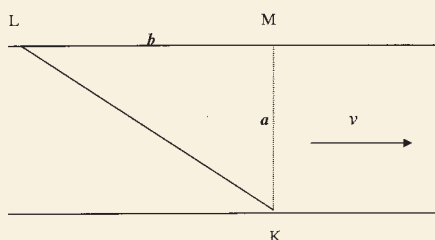
A chipmunk is taking a sunbath 5.0 m away from its burrow. It then decides to go jogging. The chipmunk takes off and runs directly away from the burrow so that its velocity is inversely proportional to the distance from the burrow. If the initial speed of the chipmunk is 2.0 m/s, how long would it take it to run 15.0 m?

DOI: 10.1119/1.1790352

► Gently Up the Stream

A student in a boat wants to cross the river from point K to point L (see the diagram). The current of the river is $v = 2.0$ km/h; the speed of the boat in still water is $u = 5.0$ km/h. The river is $a = 0.25$ km wide; distance LM is $b = 0.5$ km (see the diagram). How long would the trip take?

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► Many readers sent us the correct solutions to the *Challenges* published last spring.

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We appreciate your submissions and hope to receive more solutions in the future.

► **Note to contributors:** As the number of submissions grows, we request that certain guidelines be observed, in order to facilitate the process more efficiently:

—please email the solutions as Word files;

—please name the file "September04LSimpson" if—for instance—your name is Lisa Simpson, and you are sending the solutions to September 2004 *Challenges*;

—please state your name, hometown and professional affiliation in the file, not only in the email message.

Many thanks!

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