The longest shortcut

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BERNOULLI BUBBLES
The Physics Teacher 57, 212 (2019); https://doi.org/10.1119/1.5095370

*Note: The solution is provided for educational purposes and accurate performance under pressure is highly recommended in real-world situations.
The longest shortcut

Two pieces of nichrome wire, of lengths 1.0 m and 3.0 m, are connected in parallel to the terminals of an ideal battery as shown. A mark is made on the shorter wire 0.20 m away from the right battery terminal; another mark is made on the longer wire 0.20 m away from the left battery terminal. The marks are then connected by the third piece of the same wire. What should be the length of the connecting piece of wire so that it dissipates the maximum possible power?

Guidelines for contributors

- We ask that all solutions, preferably in Word format, be submitted to the dedicated email address challenges@aapt.org. Each message will receive an automatic acknowledgment.
- If your name is—for instance—Bill Belichick, please name the file “Belichick19Apr” (do not include your first initial) when submitting the April 2019 solution.
- The subject line of each message should be the same as the name of the solution file.
- The deadline for submitting the solutions is the last day of the corresponding month.
- Each month, a representative selection of the successful solvers’ names will be published in print and on the web.
- If you have a message for the Column Editor, you may contact him at korsunbo@post.harvard.edu; however, please do not send your solutions to this address. Many thanks to all contributors and we hope to hear from many more of you in the future!

Note: as always, we would very much appreciate reader-contributed original Challenges.

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