

**ZMATH 2014b.00557**

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**A special application of absolute value techniques in authentic problem solving.**

Int. J. Math. Educ. Sci. Technol. 44, No. 4, 587-595 (2013).

Summary: There are at least five different equivalent definitions of the absolute value concept. In instances where the task is an equation or inequality with only one or two absolute value expressions, it is a worthy educational experience for learners to solve the task using each one of the definitions. On the other hand, if more than two absolute value expressions are involved, the definition that is most helpful is the one involving solving by intervals and evaluating critical points. In point of fact, application of this technique is one reason that the topic of absolute value is important in mathematics in general and in mathematics teaching in particular. We present here an authentic practical problem that is solved using absolute values and the 'intervals' method, after which the solution is generalized with surprising results. This authentic problem also lends itself to investigation using educational technological tools such as GeoGebra dynamic geometry software: mathematics teachers can allow their students to initially cope with the problem by working in an inductive environment in which they conduct virtual experiments until a solid conjecture has been reached, after which they should prove the conjecture deductively, using classic theoretical mathematical tools.

*Classification:* H30 I20 U70

*Keywords:* absolute value definition; absolute value techniques; authentic problems; dynamic geometry software

doi:10.1080/0020739X.2012.729685