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Vui, Tran

Investigating arithmetic mean, harmonic mean, and average speed through dynamic visual representations.

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Summary: Working with dynamic visual representations can help students-with-computer discover new mathematical ideas. Students translate among multiple representations as a strategy to investigate non-routine problems to explore possible solutions in mathematics classrooms. In this paper, we use the area models as new representations for our secondary students to investigate three problems related to the average speed of a particle. Students show their ideas in the process of investigating arithmetic mean, harmonic mean, and average speed through their created dynamic figures. These figures really utilize dynamic geometry software.

Classification: M53 G43 D43 F83

Keywords: dynamic representations; arithmetic mean; harmonic mean; average speed; visualization