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## PoTW 4: Week of 6-17-2021

Problem of the Week at [shsmathteam.com](https://shsmathteam.com)

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### Problem of the Week #4: Phun Physics Phridays

*Topic: Geometry*

Let square  $RUDA$  have center  $P$ , and  $XY$  be a segment passing through  $P$  such that  $X$  lies on  $RU$  and  $Y$  lies on  $DA$ . Identify the shape of the locus of all possible centroids of trapezoid  $UDYX$ .

*helpful hint: Try finding an analogy between this problem and an equivalent physical system, and then use concepts from physics-mechanics to solve this question.*