# PoTW 28: Week of 1-28-2022

Problem of the Week at shsmathteam.com

Submission form: link to submit

For hints: andliu22@students.d125.org

Alternatively, you can message Andrew Liu on Facebook Messenger. Please don't be afraid to reach out for help, asking for hints is heavily encouraged if you feel stuck.

### Problem of the Week #28: moving points (this is clickbait)

*Geometry*

$\triangle ABC$ has $AB = 20$. Point $P$ is chosen outside of $\triangle ABC$ such that quadrilateral $APBC$ has positive integer side lengths and the area of $\triangle ABP$ is a positive integer. As the location of $P$ varies to satisfy these two conditions, the minimum possible perimeter of $APBC$ is 100. Find the perimeter of $\triangle ABC$.