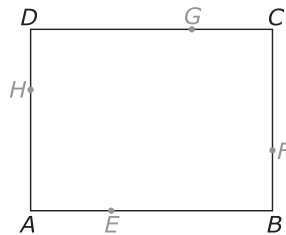




### Exercise: Making Tasks Accessible

The sides of a rectangle  $\square ABCD$  are divided in the ratio 1:2 as shown in the sketch, Let the dividing vertices be (sequentially)  $E$ ,  $F$ ,  $G$  and  $H$ . The intersections of the connecting lines  $AF$ ,  $BG$ ,  $CH$  and  $DE$  form the corners of a quadrilateral  $\square PQRS$ .

- What kind of quadrilateral is  $\square PQRS$ ?
- How does the area of this quadrilateral compare to the area of the rectangle?



- Draw a conjecture for part a) of the task.
- Find reasons and ideas for proof of your conjecture. Try to find approaches that basically take different paths.
- What approaches do you think are suitable for teaching?
- Can your solution be simplified for a special case? Are there any particularities in the transition from the special to the general case?
- Work out (a) reasonable generalization(s) of this task and try to apply your solutions from part 1 to this generalization(s).
- What variation(s) of the task and what approaches would you favor for the lesson?

Remark: Dynamic geometry software is useful for the study of special and generalized problems.

Making-Task-Accessible.ggb