Name: **Date:**

Problem-Based Task: Golden Rectangles and the Golden Ratio

Coaching

a. What is true about corresponding sides of similar polygons?

b. You know that $BCQP \sim ABCD$. How can you complete the proportion $\frac{AB}{BC} = \frac{?}{?}$, using $\overline{AD}$ and $\overline{BP}$?

c. You know $AD = 1$ and $AB = x$. What is the length of $\overline{BC}$? Explain.

d. What is the length of $\overline{AP}$? Explain.

e. What is the length of $\overline{BP}$? Explain your answer and then sketch the given diagram, labeling lengths $\overline{AB}$, $\overline{AD}$, $\overline{AP}$, $\overline{BC}$, and $\overline{BP}$.

f. How can you use the proportion from part b to find the value of x? Show your work and explain your steps.

g. What is a decimal approximation of the golden ratio?

h. What does the decimal approximation of the golden ratio tell you about the shape of any golden rectangle?