1. Draw the region bounded by $y = x^2$ and y = x + 2 and using your math skills, find its area.

- 2. Solve the following two problems however you choose using your own brain but no other sources.
 - (a) Suppose $n \in \mathbb{Z}^+$. Divide n^2 into the sum of two squares.

(b) Find a number *m* such that when either 6 or 7 is subtracted, both remainders are squares.

3. Provide some basic biographical information about Diophantus.

4. The title of Chapter 5 is "The Twilight of Greek Mathematics." Describe in a couple of sentences the political dynamic described at the beginning of this section.