1. On the same diagram, graph the three functions:
   \[ y = f_1(x) = \frac{1}{x^2}; y = f_2(x) = \frac{1}{x}; y = f_3(x) = \frac{1}{\sqrt{x}} \text{ for } x > 1. \]

   To do this, you will need to decide which functions are greater than which. (Hint: start by comparing \( x^2, x, \text{and} \sqrt{x}. \))

2. For each of the three functions, calculate the area function \( A(t) = \int_{1}^{t} f(x) \, dx \). This function gives the area under the curve \( y=f(x) \) with \( x \) between 1 and \( t \).

3. On the same diagram, graph the three area functions \( A_1(t), A_2(t) \) and \( A_3(t) \) for \( t \geq 1 \). What are the values of these functions at \( t=1 \)?
   You want to make sure that in your graph, you show clearly which function is above which function.