7. [12 points] Note that the problems on this page do not depend on each other.
   
   a. [4 points] Suppose \( F(x) \) is an antiderivative of \( f(x) = e^{-x^2} \) such that \( F(2) = 10 \). Write an integral expression for the function \( F(x) \). (Your expression should not involve the letters \( f \) or \( F \).) Remember to be careful with notation.

   Answer: \( F(x) = \theta \)

   b. [4 points] Suppose \( H(x) \) is an antiderivative of \( h(x) = \sin(x^2) \). Write an expression for the average value of \( h(x) \) on the interval \([-1, 1]\). Your expression should not involve any integrals but may involve function names.

   Answer: Average Value = \( \eta \)

   c. [4 points] Suppose \( G(x) \) is an antiderivative of \( g(x) = \sqrt{x^4 - 1} \) for \( x > 1 \).

   Find the arc length of the graph of \( G(x) \) from \( x = 2 \) to \( x = 3 \). Show your work.

   You may use your calculator to evaluate any integrals. Give the exact answer or round to two decimal places.

   Answer: Arc Length = \( \zeta \)