10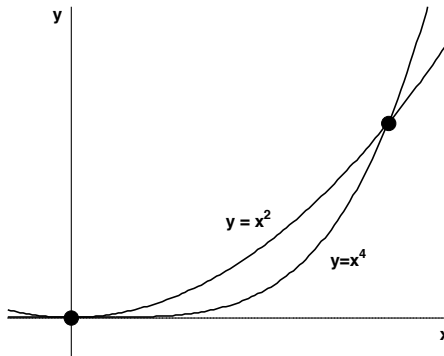. [15 points] Consider the area between the curves $y = x^2$ and $y = x^4$ in the positive quadrant as shown in the graph below. Use this area to answer the following questions.

     a. [5 points] Set up, but do not evaluate, a definite integral that describes the area described above. Write your final answer on the space provided.

                                                        _____

     b. [5 points] Set up, but do not evaluate, a definite integral that describes the volume of the solid generated by revolving the area described above about the line $y = 2$. Write your final answer on the space provided.

                                                        _____

     c. [5 points] Set up, but do not evaluate, a definite integral that describes the volume of the solid whose base is the area described above and whose cross-sections perpendicular to the x-axis are squares.

                                                        _____