

Provide a clear and organized presentation. Do not use a calculator on this quiz.

The *Pythagorean Institute of Oceanic Research* has just constructed a new aquarium exhibit that holds water behind a large cement wall that measures 20 meters by 20 meters. For viewing pleasure, a glass window, as depicted in the picture, is located at the bottom of this wall and is in the shape of a portion of the graph of $y = \sec x$ surmounted by an inverted isosceles trapezoid. The trapezoid measures 2 meters at the bottom, 4 meters at the top, and is 3 meters tall. Determine the total force due to hydrostatic pressure on this glass viewing window.

