

# Week of October 30, 2017

Let  $A$  be the area of the region in the first quadrant bounded by the line  $y = \frac{1}{2}x$ , the  $x$ -axis, and the ellipse  $\frac{1}{9}x^2 + y^2 = 1$ . Find the positive number  $m$  such that  $A$  is equal to the area of the region in the first quadrant bounded by the line  $y = mx$ , the  $y$ -axis, and the ellipse

$$\frac{1}{9}x^2 + y^2 = 1.$$