

10. A right triangle with hypotenuse length 8 inches is rotated about one of its legs to generate a right circular cone. What should the length of the sides of the triangle be to generate the cone of maximum volume? Verify you have maximized volume $\left(V_{\text{cone}} = \frac{1}{3}\pi r^2 h\right)$. (12 points)



11. A force of 8 pounds is required to stretch a spring 2 inches beyond its natural length of 8 inches. Find the work required to stretch the spring from a length of 9 inches to a length of 11 inches. (10 points)