1.) A rectangle with length $x$ and width $y$ has a perimeter of 20 ft. Write its area as a function of $x$.

2.) A rectangle with length $x$ and width $y$ has an area of 100 $ft^2$. Write its perimeter as a function of $x$.

3.) A right triangle has height 3. Write the area of the triangle as a function of its hypotenuse $x$.

4.) Let $x$ and $y$ be two numbers whose sum is 100. Write the sum of the squares of the numbers as a function of $x$.

5.) A rectangular 100 ft pen is build against a wall (i.e. one side is the wall and doesn’t require fencing). The two sides with equal lengths, $y$, cost $10/ft$ to fence and the third side, $x$, (parallel to wall) cost $25/ft$ to fence. Write the total cost of the fence as a function of the third length $x$.

6.) A closed rectangular box has a square base and volume of 16 $ft^3$. Write the outer surface area of the box as a function of height $h$.

7.) The volume of an open cylindrical can is $9\pi$ $in^3$. Write the outer surface area of the can as a function of its base radius $r$. 