

Your Name:  
Your Section:

### Math 124A - Quiz 1

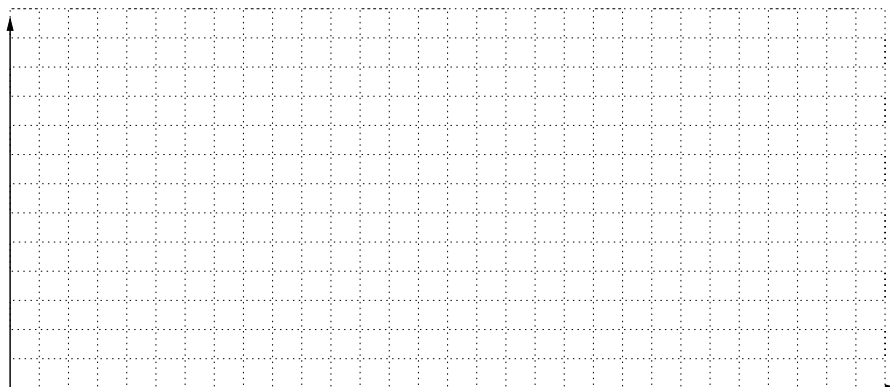
A mouse is running in a wheel, which is generating power through a generator which is in turn powering a pump. Suppose the function describing the distance (in feet) traveled around the wheel by the mouse as it depends on time (in seconds) is given by

$$d(t) = 2t, \quad t \geq 0.$$

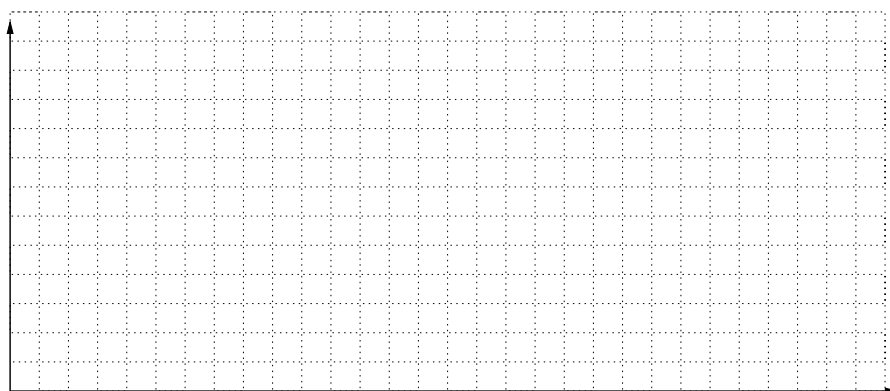
Suppose the function describing the amount of water generated (in ounces) as it depends on the distance traveled (in feet) is given by

$$w(d) = \frac{\sqrt{d-2}}{4}.$$

Graph these two functions separately.



Distance as a function of time.

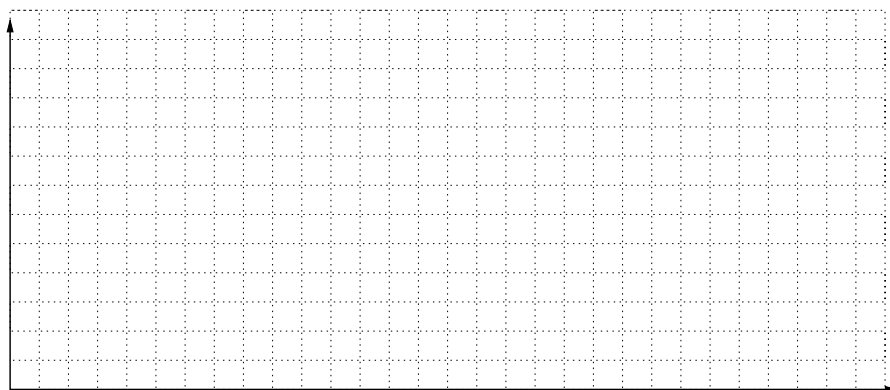


Water generated as a function of distance.

What are the domains of  $d(t)$  and  $w(d)$ ?

What is the function  $W(t)$  describing the amount of water generated as it depends on time?

Graph the function  $W(t)$ .



Water generated as a function of time.

What is the domain of  $W(t)$ ?