From our (Math 216) perspective, the point of calculus is to convert between two functions which record essentially the same data. One function (say f) records some quantity, and the other function (which would be called f' records the rate of change of that quantity.

Here are a couple of charts which encapsulate the ideas we first encountered last week:

If the function f is of this type...	then f' is of this type:
constant (i.e. horizontal line)	0
linear (i.e. straight line)	constant
quadratic (i.e. parabola)	linear
cubic	quadratic
degree d polynomial	degree $(d-1)$ polynomial
$\sin x$	
$\cos x$	
exponential	
logarithmic	

If the function f measures...	then there is some other function f' that measures...
BLAH	the rate of change of BLAH
position (i.e. f is an odometer)	velocity (i.e. f' is a speedometer)
velocity	acceleration
energy	power
electric charge	electric current