# Worksheet 5

**Name:**

**1.** The voltage $V$ ( measured in volts) from an outlet at time $t$ (in seconds) is given by the function

$$V(t) = 156\cos(120\pi t)$$

(a) Sketch two cycles of the the graph of $y = V(t)$. We will do this together.

(b) Find the rate of change of voltage with respect to time.

(c) Find two $t$ values where the rate of change of voltage is zero.

**2.** Let $f(t) = \dfrac{\sin(t)}{\cos(t)}$.

(a) Use that quotient rule to compute $f(t)$.

(b) At which values of $t$ does $f'(t)$ not exist?