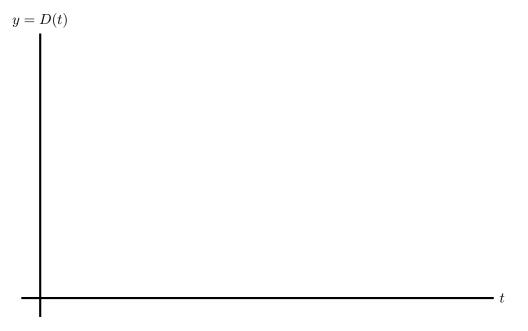**6.** [13 points] The alternative rock band π'd-Eye-Blind was unhappy with the first music video and are trying again. There is just one camera on a drone, which again moves in a circle at a constant speed, between a maximum of 12 feet above the ground and a minimum of 2 feet above the ground. At time $t = 0$ it is halfway between the maximum and minimum height, and moving upward. It makes one full circle in 8 seconds.
Let $D(t)$ be the height of the drone t seconds after they start filming.

a. [4 points] Sketch a graph of $y = D(t)$ for $0 \leq t \leq 10$. Be sure to label your axes, and pay careful attention to the shape of your graph.

$y = D(t)$

t

b. [4 points] Find a formula for $D(t)$.

Answer: $D(t) =$ _____

c. [5 points] Find all times at which the drone is exactly 5 feet above the ground for $0 \leq t \leq 10$. Show your work, and give your answers in exact form.