1. Starting at midnight oil is pumped at a constant rate into a storage tank that contained some oil when the pumping began. The total capacity of the tank is 19,000 gallons. At 3 am the tank contains 7,000 gallons of oil, and two hours later it contains 11,000 gallons.

a. Express the amount of oil (in thousands of gallons) in the tank as a function of the number of hours after midnight.

b. How much oil was in the tank when the pumping began?

c. At what time are there exactly 16,000 gallons of oil in the tank? When is the tank completely full?

2. Find the equation of the line that contains the point $(-1, 3)$ and has slope $\frac{-1}{2}$. Sketch the line.