1. [12 points] Jerry Giraffe was a giraffe. He was six feet tall when he was born, and from that moment, he grew at a constant rate of three inches per month until he was twenty feet tall, at which point he stopped growing. He remained twenty feet tall for the rest of his life.

Recall that there are 12 inches in a foot and 12 months in a year.

a. [3 points] Let m be Jerry's age, in months, and let h be Jerry's height, in feet. Find a formula for h in terms of m that is valid during the time he was growing, that is, from the time Jerry was born until the time he reached his full-grown height of 20 feet.

Answer: During the time that he was growing, $h =$ _____

b. [2 points] How old was Jerry when he stopped growing, i.e. when he reached his full-grown height? *Include units.*

Answer: _____

Let $j(m)$ be Jerry's height in <u>feet</u> when he was m <u>months</u> old. So $h = j(m)$.
Note that $j(m)$ is defined only while Jerry is alive.

c. [4 points] Jerry Giraffe died at the age of 400 months.
What are the domain and range of $j(m)$ in the context of this problem?
Use either interval notation or inequalities to give your answers.

Answers: Domain: _____ Range: _____

d. [3 points] Give a formula for $j(m)$ in terms of m that is valid on its entire domain.
Hint: Use a piecewise-defined function.

Answer: $j(m) =$