39 (a) We must solve the equation $f(x) = 55$.

$36.2e^{0.14x} = 55 \Rightarrow e^{0.14x} = \frac{55}{36.2} \Rightarrow \ln e^{0.14x} = \ln \frac{55}{36.2} \Rightarrow 0.14x = \ln \frac{55}{36.2}$

$\Rightarrow x = \frac{\ln(55/36.2)}{0.14} \approx 2.99$. Since $x = 0$ corresponds to 1987, $x \approx 3$ represents $1987 + 3 = 1990$, rounded to the nearest year.

(b) Graph $Y_1 = 36.2*e^{\wedge}(0.14X)$ and $Y_2 = 55$. Their graphs intersect near (3, 55) as shown in *Figure 39*. Therefore, Christmas credit card spending was approximately \$55 billion in 1990. A table can be used to show a numerical solution near $x = 3$.

[0, 10, 1] by [0, 150, 10]

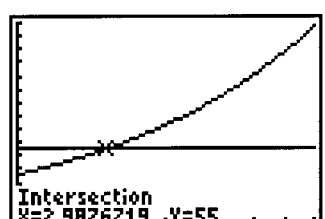

Figure 39