1. The number of people at people infected with the insatiable thirst for math after t minutes is modeled by the function

$$W(t) = \frac{15430}{1+182e^{-0.34t}}$$

For each of the following give the three decimal approximation then round to the nearest person or minute. (use approx. sign) Show all work that leads to your answer.

(a) What was the initial number of people infected?

(b) After how many minutes will the number of infected people be 5000?

(c) After how many minutes is the infection be spreading the fastest rate?

(d) How many people are infected after an hour and a half?

(e) According the model, what is the population of people?

(f) After how many minutes will the number of infected people reach 37% of the total population?

2. For $f(x)=\frac{7}{5}+\frac{3}{4}(.003)^{\left(\frac{5}{4}-4x\right)}$

(a) Write $f(x)$ in standard transformation form and describe the transformations.
(b) Find the **simplified, exact value** of the *y*-intercept. Show the work that leads to your answer.
(c) Sketch $f(x)$ showing the basic shape, *y*-intercept, and any/all asymptotes.
(d) Find D_f :
(e) Find R_f :
(f) Find the **Equation**(s) of any/all asymptotes. Be sure to label which type they are.