1. 

$$
F(x)=x \sqrt{6-x}
$$

(a) What is the domain of $F(x)$ ?
(b) Find the intervals of increase or decrease and critical numbers.
(c) Find the intervals of concavity and the inflection points.
(d) Sketch the graph.
2. Compute the following limits; you may use L'Hopital's rule:
$\lim _{x \rightarrow-\infty} \frac{e^{x}}{1-e^{x}}=$
$\lim _{x \rightarrow+\infty} \frac{e^{x}}{1-e^{x}}=$
3.

$$
g(x)=\frac{e^{x}}{1-e^{x}}
$$

(a) What is the domain of $g(x)$ ?
(b) Find the horizontal and vertical asymptotes.
(c) Find the intervals of increase or decrease and critical numbers.
(d) Find the intervals of concavity and the inflection points.
(e) Sketch the graph.

