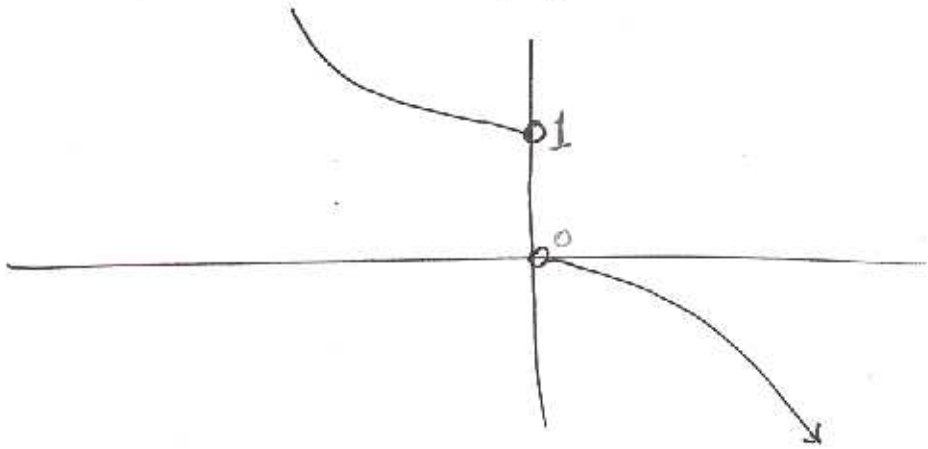
Group Work 1, Section 2.2
An "Interesting" Function

1. Create a graph of the function $y = \dfrac{1}{1-2^{1/x}}$, $-2 \le x \le 2$.



2. Estimate $\lim\limits_{x \to 0^+} \dfrac{1}{1-2^{1/x}}$ from the graph. Back up your estimate by looking at the function, and discussing why your estimate is probably correct.

$$\lim_{x \to 0^+} \left(\frac{1}{1-2^{\frac{1}{x}}} \right) = 0$$

3. Estimate $\lim\limits_{x \to 0} \dfrac{1}{1-2^{1/x}}$ from the graph. Back up your estimate by looking at the function, and discussing why your estimate is probably correct.

$$\lim_{x \to 0^-} \left(\frac{1}{1-2^{\frac{1}{x}}} \right) = 1$$

4. Does $\lim\limits_{x \to 0} \dfrac{1}{1-2^{1/x}}$ exist? Justify your answer.

No