Thus, while \( \lim_{x \to 1} f(x) \) does not exist, it is correct to write (look at the graph in Figure 10).

In Problems 1-6, find the indicated limit.

1. \( \lim_{x \to 2} (x^2 + 2x - 1) \)
2. \( \lim_{x \to 2} (1 - 2t) \)
3. \( \lim_{x \to 2} (2 + 2t - 1) \)
4. \( \lim_{x \to 2} (x^2 - 1) \)
5. \( \lim_{x \to 2} (t^2 + 2t - 1) \)
6. \( \lim_{x \to 2} (x^2 - 1) \)

In Problems 7-18, find the indicated limit.

7. \( \lim_{x \to 3} (x - 5) \)...

In Problems 19-28, use a calculator to find the indicated limit.

1. \( \lim_{x \to 3} (t^2 - 1) \)...

Concepts Review

Figure 10

[Graph showing limits and asymptotes]

Problem Set 1.1

We believe that you will find the following theorem quite reasonable.

\[
\lim_{x \to a} f(x) = L \text{ if and only if } \lim_{x \to a} [f(x)]^{1/x} = L.
\]

Thus, while \( \lim_{x \to a} f(x) \) does not exist, \( f(x) \) is close to some number (look at the graph in Figure 7).

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