

**Math 163A section 01 (Barsamian) Graphing Group Work for Tuesday Jan 18, 2005**

1 Sketch the graph of a single function  $f$  that has all of the following properties:

- $\lim_{x \rightarrow -3^-} f(x) = 2$
- $f(-3) = 5$
- $\lim_{x \rightarrow -3^+} f(x) = -1$
- $\lim_{x \rightarrow 4} f(x) = -\infty$

2 Sketch the graph of a single function  $f$  that has all of the following properties:

- $\lim_{x \rightarrow -\infty} f(x) = -3$
- $f(-5) = 0$
- $f(0) = 5$
- $\lim_{x \rightarrow 3^-} f(x) = -\infty$
- $\lim_{x \rightarrow 3^+} f(x) = \infty$
- $\lim_{x \rightarrow \infty} f(x) = 4$

3 Sketch the graph of a single function  $f$  that has all of the following properties:

- horizontal asymptote at  $y = \frac{5}{3}$
- $x$ -intercept at  $(-7, 0)$
- vertical asymptote at  $x = 5$
- hole at  $x = 11$

4 Write a function that would have the graph from problem 3.

5 Make a sign chart for the function  $f(x) = \frac{x^2 - 7x + 12}{x^2 - x - 6}$ .