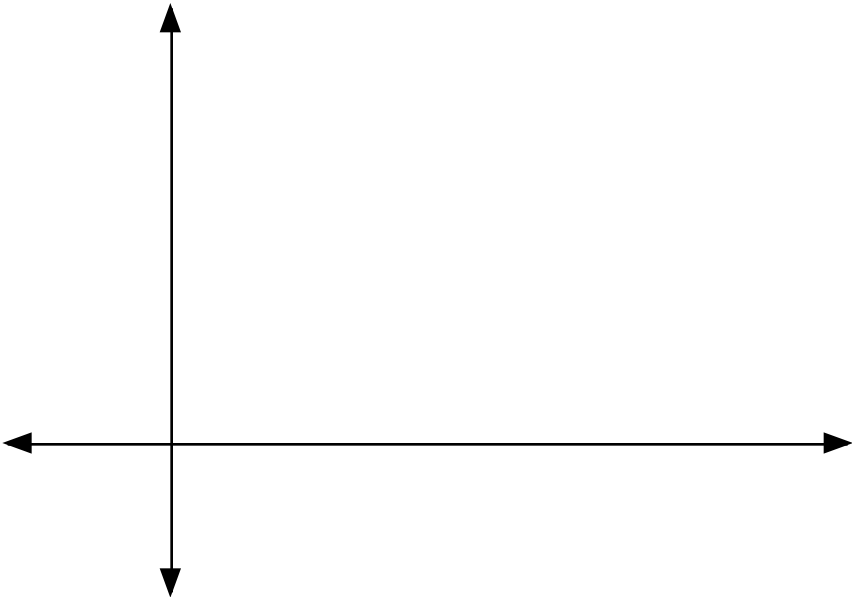


Classwork 5

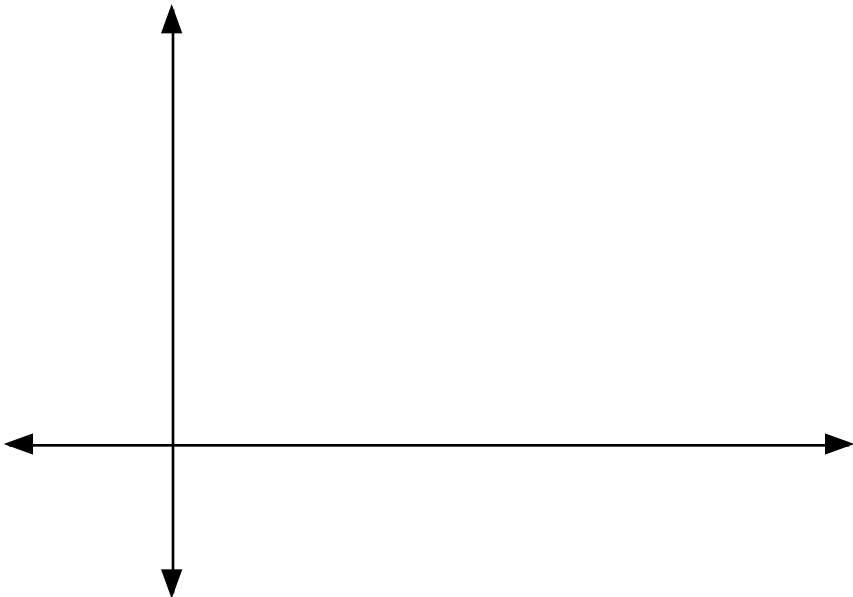
1. Find $\lim_{x \rightarrow 7} \frac{x^3 - 5x^2 - 14x}{x^2 - 7x}$

x	f(x)
8	
7.5	
7.1	

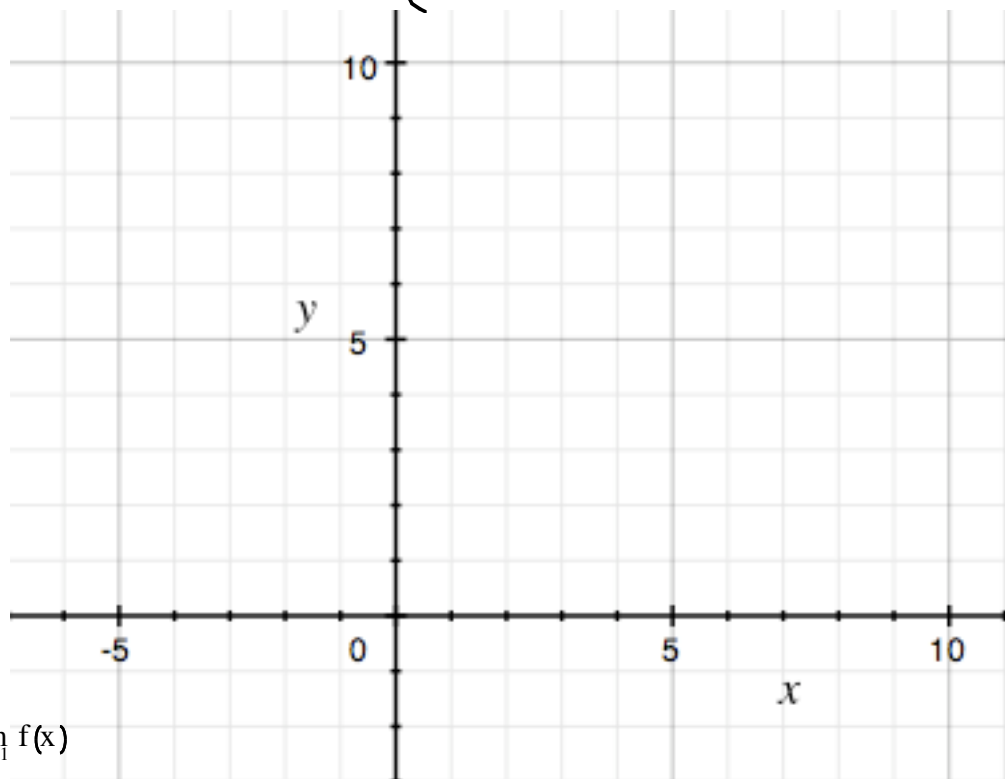


2. Find $\lim_{x \rightarrow \infty} \frac{x^2 - 3x + 11}{4x^2}$

x	f(x)



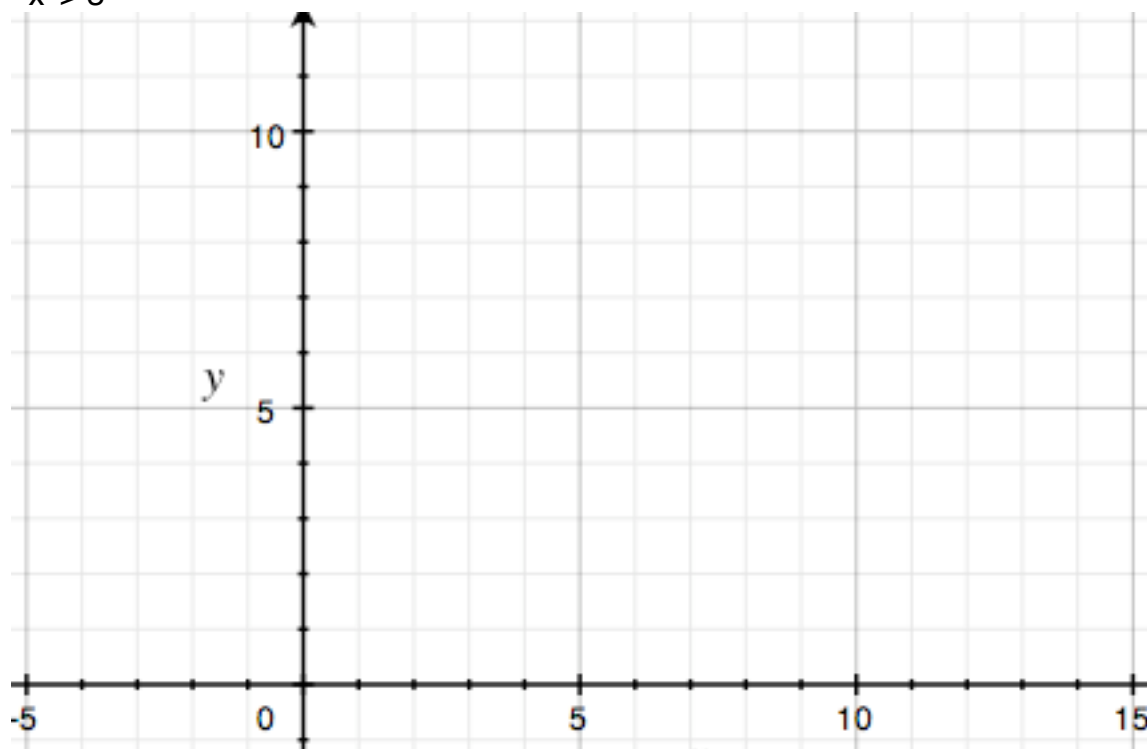
3. a) Sketch a graph of the function $f(x) = \begin{cases} y = 2x + 3 & \text{for } x \neq 1 \\ y = 3 & \text{for } x = 1 \end{cases}$ on the axes below.



- b) Find $\lim_{x \rightarrow 1} f(x)$

4. a) Sketch a graph of the function $f(x) = \begin{cases} y = \sqrt{x - 3} & \text{for } x > 3 \\ y = -1/2x + 4 & \text{for } x \leq 3 \end{cases}$ on the axes below.

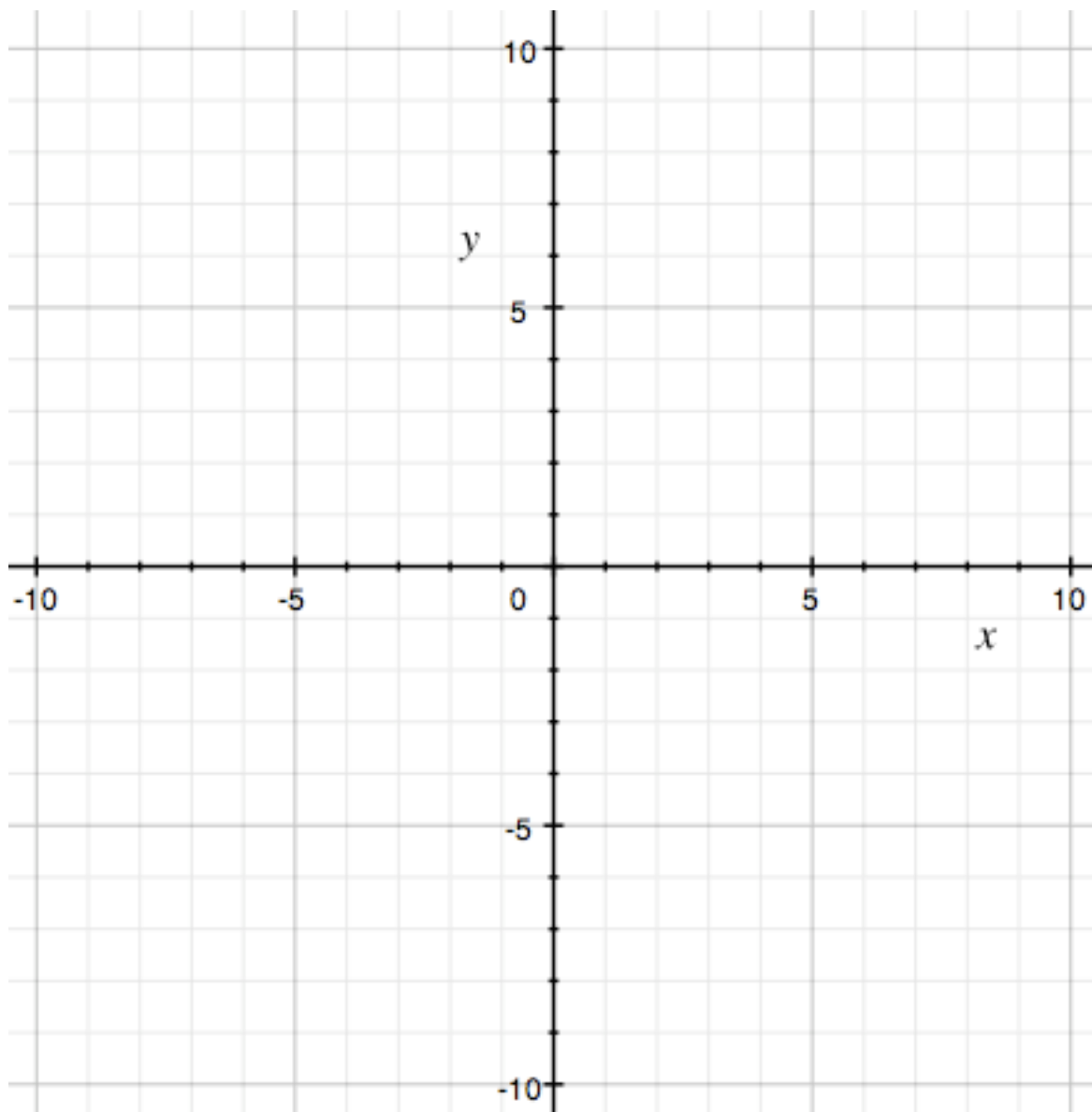
- b) Find $\lim_{x \rightarrow 3} f(x)$



c) Find $\lim_{x \rightarrow 3^+} f(x)$

d) Find $\lim_{x \rightarrow 3^-} f(x)$

5. a) Graph $y = \frac{x^2}{(x-5)^3(2-x)^2}$ on the axes below.



b) Find each limit.

$\lim_{x \rightarrow 2^-} y =$

$\lim_{x \rightarrow 2^+} y =$

$\lim_{x \rightarrow 2} y =$

$\lim_{x \rightarrow 5^-} y =$

$\lim_{x \rightarrow 5^+} y =$

$\lim_{x \rightarrow 5} y =$

Practice Problems

1. Find $\lim_{x \rightarrow -3} \frac{x^2 - 2x - 15}{x + 3}$

2. Find $\lim_{x \rightarrow \infty} \frac{x^5 + x^2 + 4}{x^3}$

3. Use the graph below to find the following limits.

a) $\lim_{x \rightarrow -2} f(x)$

b) $\lim_{x \rightarrow 3+} f(x)$

c) $\lim_{x \rightarrow 3-} f(x)$

d) $\lim_{x \rightarrow 3} f(x)$

