Name: _____ **TC**

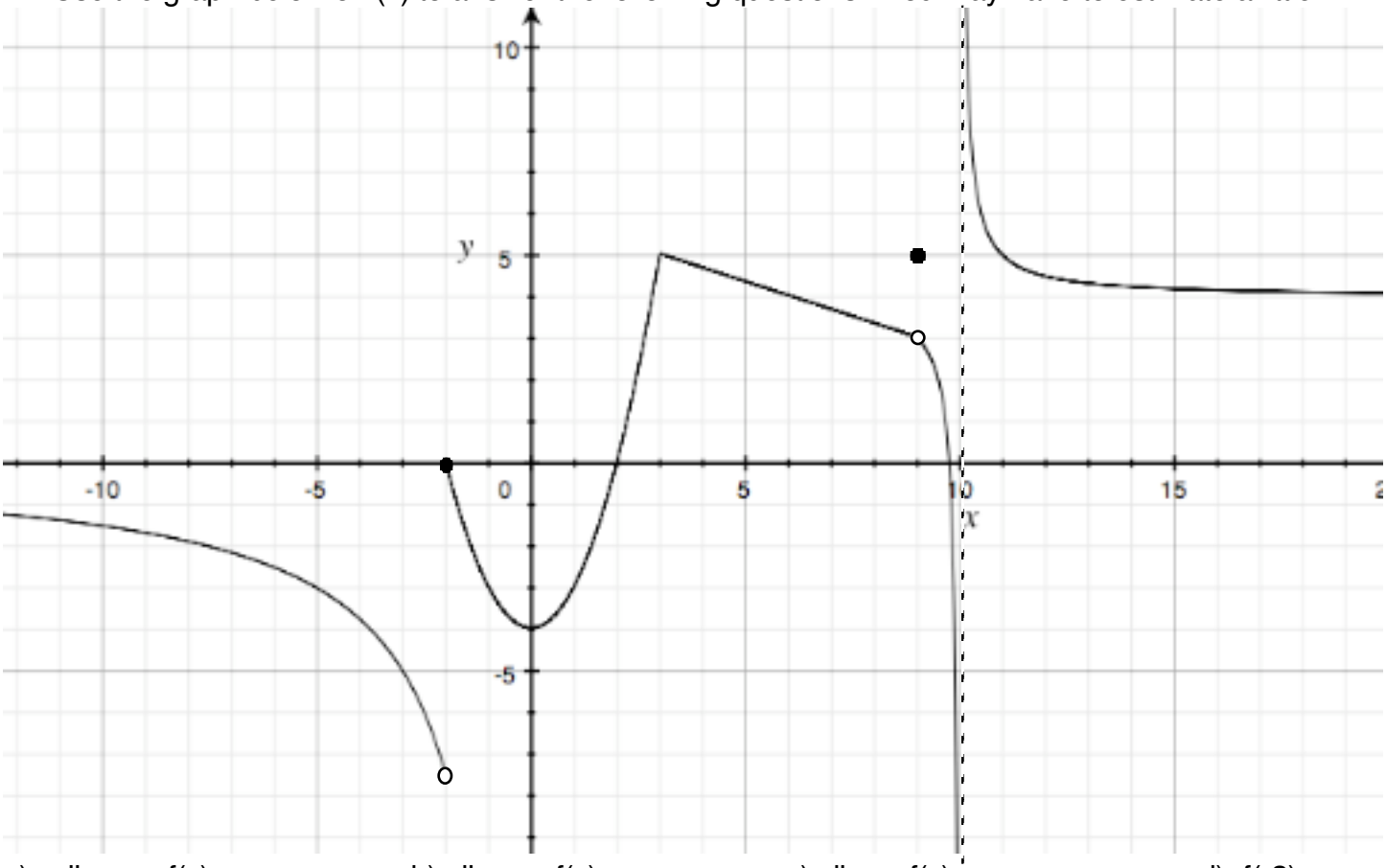
Classwork 6

1. Find each limit without a calculator. Then use the calculator to check your answer.

a) $\lim_{x \to 3} \dfrac{x^2 + 6x - 27}{x^2 - 8x + 15}$

b) $\lim_{x > \infty} \dfrac{x^4 - 2x^2 + 5}{x^3}$

2. Use the graph below of f(x) to answer the following questions. You may have to estimate a little.



a) $\lim_{x \to -2^+} f(x) =$

b) $\lim_{x \to -2^-} f(x) =$

c) $\lim_{x \to -2} f(x) =$

d) $f(-2) =$

e) $\lim_{x \to 3+} f(x) =$

f) $\lim_{x \to 3-} f(x) =$

g) $\lim_{x \to 3} f(x) =$

h) $f(3) =$

h) $\lim_{x \to 9} f(x) =$

i) $f(9) =$

j) $\lim_{x \to 10} f(x) =$

k) $\lim_{x \to 10-} f(x) =$

3. a) Use a calculator to find $\lim_{x \to \infty} \frac{x^6 + x^2 + 5x + 2}{3x^4 + 8x^3 - 7}$

b) How could you manipulate the equation to show that your answer is correct?

4. a) Use a calculator to find $\lim_{x \to \infty} \frac{x^7 + 5x^4 - 3}{3x^7 - 2x^2 + 1}$

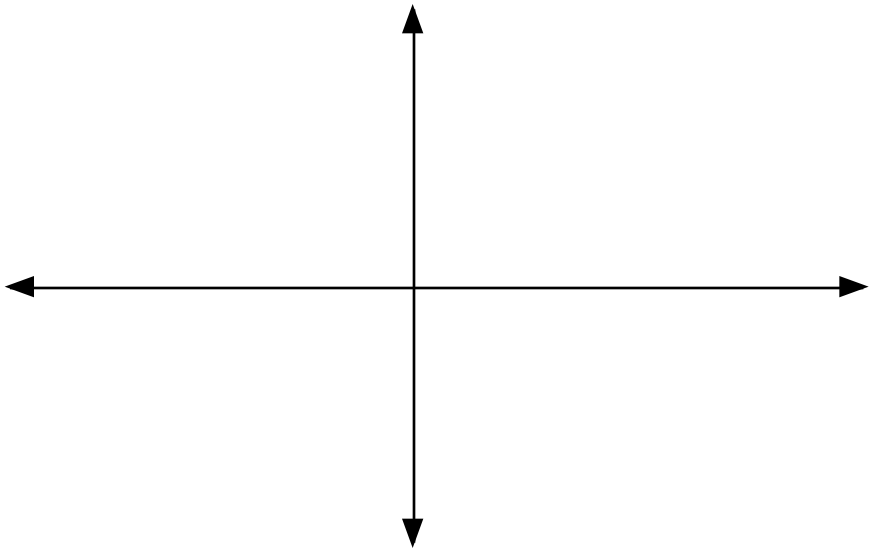
b) How could you manipulate the equation to show that your answer is correct?

5. Find $\lim_{x \to \infty} \frac{x^3 + 4x^2 + 7}{5x^5 - 8x}$

6. Find the limit of the equation in #5 as $x \to 0$

7. Find $\lim_{x \to 0} \frac{\sin x}{x}$ by using the chart. Then sketch a graph next to it.

x	f(x)
1	
.2	
.03	
.004	
.0005	
.00006	
.000007	



8. Find $\lim_{x \to 9} \frac{x^2 - 81}{\sqrt{x} - 3}$

9. Find $\lim_{x \to 0} \frac{\sqrt{x^2 + 9} - 3}{x^2}$

Practice Problems

1. Find $\lim_{x \to 4} \frac{x - 4}{x^2 - 9x + 20}$

2. Find $\lim_{x \to \infty} \frac{6x^4 - x^3 - 5}{x^4 + 12}$

2. Find $\lim_{x \to 0} \frac{x^4 - 5x^3}{6x^3 + x^2}$