**Name:** _____ **TC**

## Classwork 8

1. Find each limit.

a) $\lim_{x \to -6} \dfrac{2x^2 + 4x - 48}{x + 6}$

b) $\lim_{x \to \infty} \dfrac{2x^5 + 3x^2 + 1/x}{x^5}$

c) $\lim_{x \to 0} \dfrac{x^2 - 3x}{x}$

d) $\lim_{x \to 3} \dfrac{x^2 - 7x + 10}{x + 3}$

2. Find each limit using the graph of f(x)

a) $\lim_{x \to \infty} f(x) =$

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

c) $\lim_{x \to -8} f(x) =$

d) $f(-8) =$

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

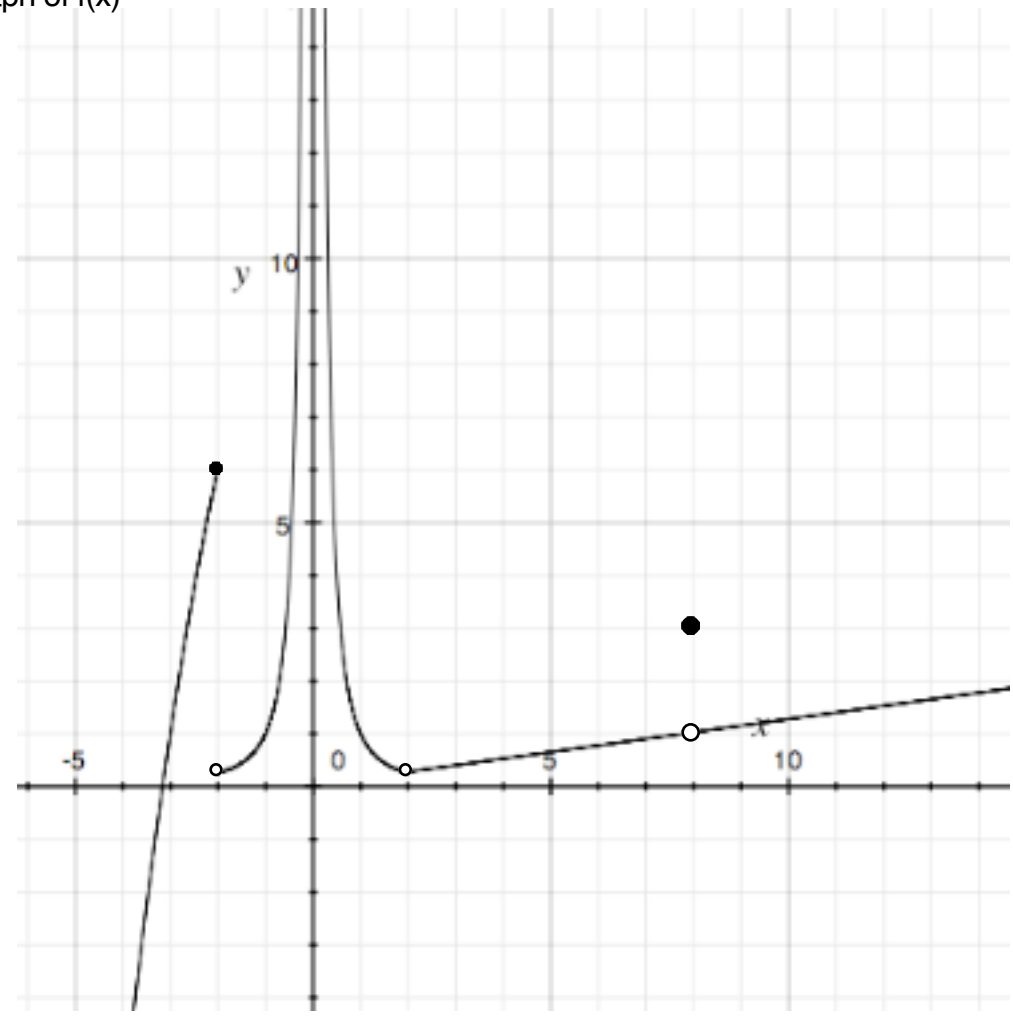
f) $\lim_{x \to -2+} f(x) =$

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

h) $\lim_{x \to 0} f(x) =$

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

j) $f(2)$



3. Find $\lim_{x \to \infty} \frac{x^6 + x^2 + 5x + 2}{3x^4 + 8x^3 - 7}$

4. Find $\lim_{x \to \infty} \frac{x^7 + 5x^4 - 3}{3x^7 - 2x^2 + 1}$

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 $\lim_{x \to 0} \frac{\sin x}{x}$

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 $\lim_{x \to 4} \frac{x^2 - 25}{x^2 - 16}$

2. Find $\lim_{x \to \infty} \frac{x^2 - 25}{x^2 - 16}$

3. Find $\lim_{x \to 0} \frac{x^2 - 25}{x^2 - 16}$

Answer each question using the given information.

4. $\lim_{x \to 4+} f(x) = 7$ and $\lim_{x \to 4-} f(x) = 5$ So, $\lim_{x > 4} f(x) =$

a) 7 b) 5 c ) Does not exist. d) Cannot be determined from this information.

5. $\lim_{x \to 0+} f(x) = 12$ and $\lim_{x \to 0-} f(x) = 12$ So, $\lim_{x > 0} f(x) =$

a) 0 b) 12 c ) Does not exist. d) Cannot be determined from this information.

6. $\lim_{x \to -2+} f(x) = 3$ and $\lim_{x \to -2-} f(x) = 3$ $f(-2) = 10$ So, $\lim_{x \to 0} f(x) =$

a) 3 b) 10 c ) Does not exist. d) Cannot be determined from this information.

7. $\lim_{x \to -7+} f(x) = 10$ and $\lim_{x \to -7-} f(x) = 10$ $\lim_{x \to -7} f(x) = 10.$ So, $f(-7) =$

a) 10 b) -7 c ) Does not exist. d) Cannot be determined from this information.