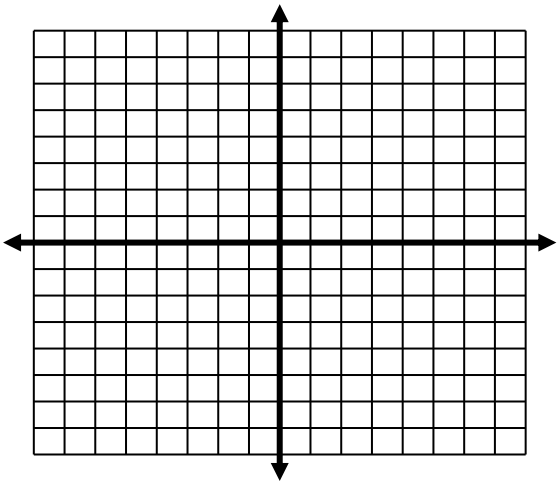
In-Class Review: Unit 4 Functions and Limits

Part 1:

1. Write an equation of a rational function, f(x) with Removable Discontinuity at 7, Non-Removable Discontinuity at -2, and Horizontal Asymptote of y = 3/4.

2. State the following and graph $g(x)=\dfrac{2x^2-10x+8}{4x^2-4x}$

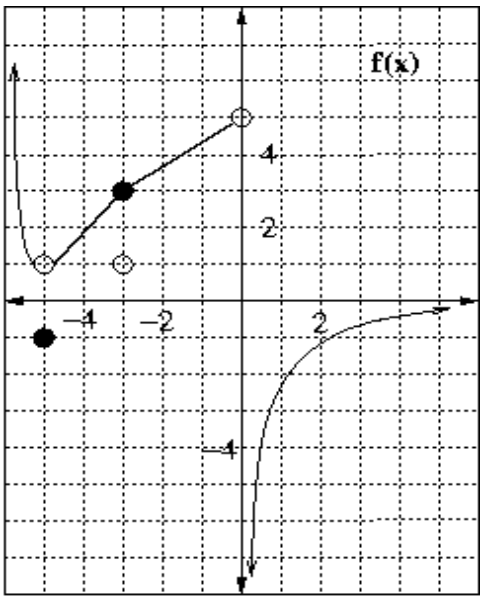
- Domain:
- Range:
- x & y intercepts:
- Removable Discontinuity:
- Non-Removable Discontinuity:
- Horizontal Asymptote:
- Limits at discontinuities:
- End Behavior using limits:



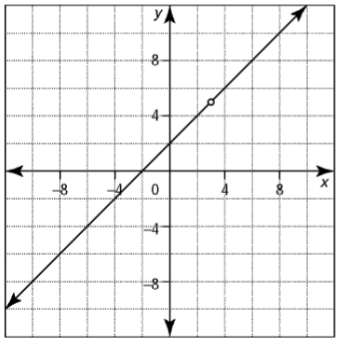
Part 2:

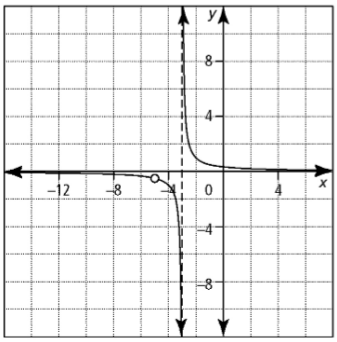
Using the graph of *f(x)* below, find the following limits.

1. $\lim_{x\to -5} f(x)$
2. $\lim_{x\to -3} f(x)$
3. $\lim_{x\to -\infty} f(x)$
4. $\lim_{x\to 0^-} f(x)$
5. $\lim_{x\to \infty} f(x)$
6. $\lim_{x\to 0} f(x)$
7. $f(-5)$



Write an equation for the graphed rational function.

8.  Hole (3, 5)

9.  Hole (-5, -1/2)

Part 3:

State the following and make a graph of $g(x)=\dfrac{\sqrt[3]{x}}{x^2-x}$

- Domain:
- Range:
- x & y intercepts:
- Max and Min:
- Increasing:
- Decreasing:
- Limits at discontinuities:
- End Behavior using limits: