10.3 More on Limits
Target 9C: Evaluate a limit of a function graphically
Target 9D: Calculate one-sided limits and two-sided limits

Review of Prior Concepts

Given $\lim\limits_{x \to 3} f(x) = 2$ and $\lim\limits_{x \to 3} g(x) = -1$, find:

a) $\lim\limits_{x \to 3}(2f(x) + g(x))$

b) $\lim\limits_{x \to 3} \dfrac{(g(x))^2}{f(x) - 4}$

More Practice

Limits Analytically
http://www.ck12.org/book/CK-12-Precalculus-Concepts/section/14.4/
http://www.ck12.org/book/CK-12-Precalculus-Concepts/section/14.5/
http://precalculus.flippedmath.com/151-limits-analytically.html
http://www.barrington220.org/cms/lib8/IL01001296/Centricity/Domain/321/1.3%20D1%20Ans.pdf
https://youtu.be/-gjURkNuh9o
https://youtu.be/MspClN-r8C0

Finding Limits Graphically

$\lim\limits_{x \to c} f(x) = L$
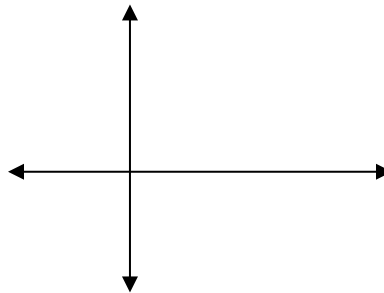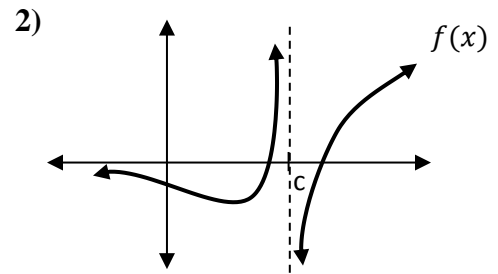
In order for $\lim\limits_{x \to c} f(x)$ to exist,

$\lim\limits_{x \to c^-} f(x)$ has to equal $\lim\limits_{x \to c^+} f(x)$
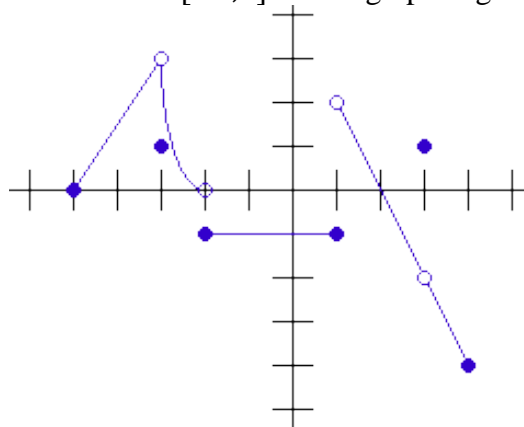
"limit from the left = limit from the right"
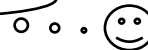
Examples: Does $\lim_{x \to c} f(x)$ exist? Explain why or why not.

1)

2)

3)

4)
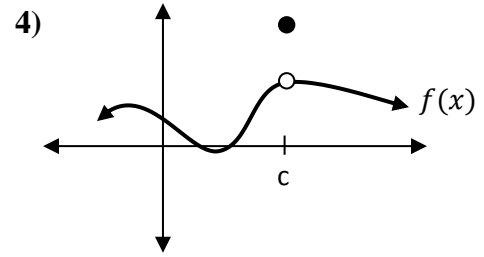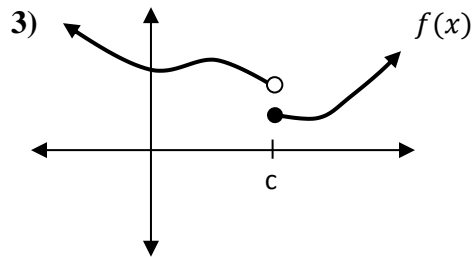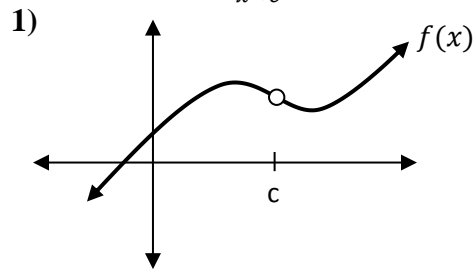
Let g be a function defined on the interval $[-5,4]$ whose graph is given as:

Using the graph, find the following limits if they exist, and, if not, explain why not.

1.) $\lim_{x \to 3} g(x)$

6.) $\lim_{x \to 1} g(x)$

2.) $\lim_{x \to 0} g(x)$

7.) $\lim_{x \to -2^-} g(x)$

3.) $\lim_{x \to -3} g(x)$

8.) $\lim_{x \to 4} g(x)$

4.) $\lim_{x \to 1^+} g(x)$

9.) $\lim_{x \to 2} g(x)$

5.) $\lim\limits_{x \to 1^-} g(x)$ **10.)** $\lim\limits_{x \to -2^+} g(x)$

Homework Assignment
p.826 #27–33odd,37–45odd