Calculus I	**Name:** _____
Study Guide 2	**Class:** _____
Due Date: _____	**Score:** _____

No Work ⇔ No Points

Use Pencil Only ⇔ Be Neat & Organized

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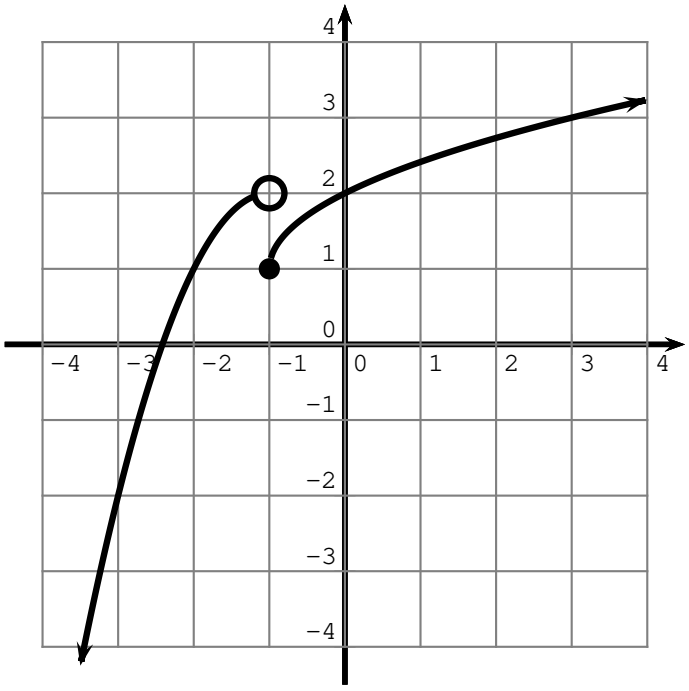
1. Use the graph of the function $f(x)$ below to evaluate the following:



(a) (3 points) Is $f(x)$ continuous at $x = 0$? Must show work.

(a) _____

(b) (3 points) Is $f(x)$ continuous at $x = -1$? Must show work.

(b) _____

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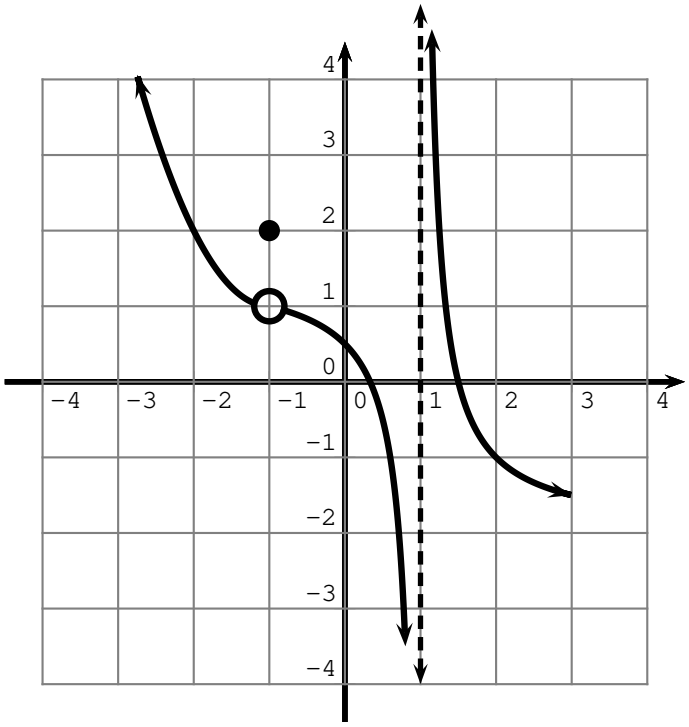
2. Use the graph of the function $f(x)$ below to evaluate the following:



(a) (3 points) Is $f(x)$ continuous at $x = -1$? Must show work.

(a) _____

(b) (3 points) Is $f(x)$ continuous at $x = 2$? Must show work.

(b) _____

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3. (4 points) Evaluate $\lim_{h \to 0} \dfrac{f(x+h) - f(x)}{h}$ for any constant function.

3. _____

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4. (2 points) True or False: All parabolas represent a function.

4. _____

5. (5 points) Find and simplify the difference quotient for $f(x) = mx + b$, and then evaluate for $h = 0$.

5. _____

6. (4 points) Simplify: $(1 + \tan x)^2 - \dfrac{1}{(1 + \sin x)(1 - \sin x)}$

6. _____

7. (4 points) Evaluate: $\lim\limits_{x \to 1} \dfrac{x^2 + x - 2}{x^2 - x}$

7. _____

8. (4 points) Evaluate: $\lim\limits_{x \to 0} \dfrac{\sqrt{x^2 + 100} - 10}{x^2}$

8. _____

9. (5 points) Evaluate: $\lim_{x\to 0} \dfrac{\dfrac{1}{x-1}+\dfrac{1}{x+1}}{x}$

9. _____

10. (5 points) Evaluate: $\lim_{x\to -1} \dfrac{x^3-x^2-5x-3}{(x+1)^2}$

10. _____

11. (5 points) Evaluate $\lim_{x\to a} \dfrac{2f(x)-g(x)}{(f(x)+7)^{2/3}}$ if $\lim_{x\to a} f(x)=1$ and $\lim_{x\to a} g(x)=-5$.

11. _____