QUIZ 4 - MATH 112 Tuesday, January 31

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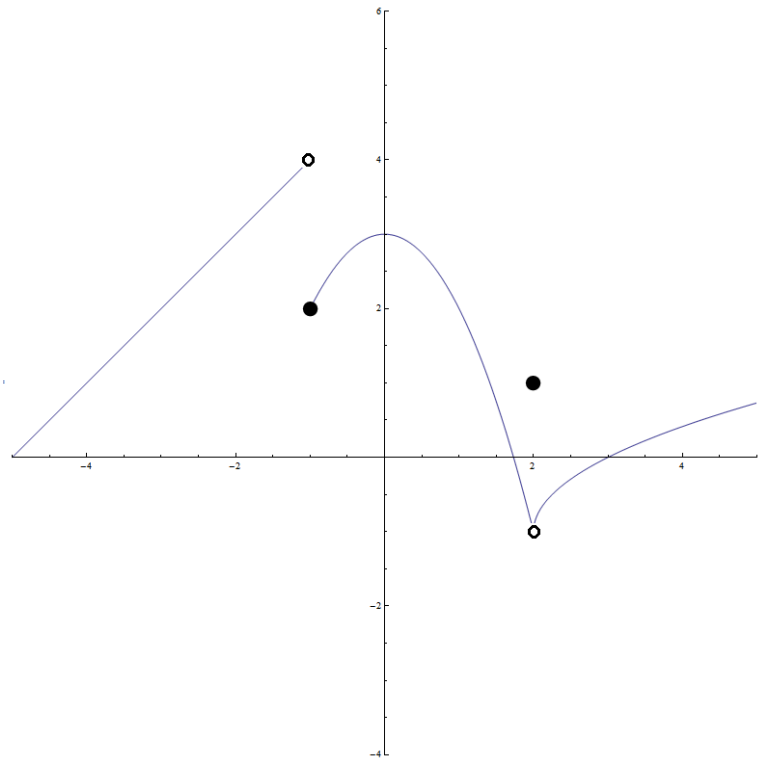
Read each problem **very carefully** before starting to solve it. Each problem is worth 5 points. It is necessary to show **all** your work. Correct answers without explanations are worth 0 points. GOOD LUCK!!

1. Consider the function $y = f(x)$ whose graph is sketched below: Find the following:




$f(-1) =$ $\qquad$ $f(2) =$

$\lim_{x\to -1^-} f(x) =$ $\qquad$ $\lim_{x\to 2^-} f(x) =$

$\lim_{x\to -1^+} f(x) =$ $\qquad$ $\lim_{x\to 2^+} f(x) =$

Circle all that apply:

At $x = -1$, $f$ has a limit is left continuous is right continuous is continuous.

At $x = 2$, $f$ has a limit is left continuous is right continuous is continuous.

2. Let $f(x) = \begin{cases} \dfrac{\sqrt{7-x}-2}{x-3}, & \text{if } x < 3 \\ -\dfrac{1}{4}, & \text{if } x = 3 \\ \dfrac{x^2-3x}{x^2+6x-27}, & \text{if } x > 3 \end{cases}$

Compute the following:

(a) $f(3) =$

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

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

Circle all that apply:

At $x = 3$, $f$ has a limit is left continuous is right continuous is continuous.