Name: ______________________________

Quiz 3 ♡

MATH 200

September 8, 2021

1. $\lim\limits_{x\to 0} \dfrac{\tan(x)}{3x} =$

2. $\lim\limits_{x\to 2} \ln\left(\dfrac{x^2-3x+2}{x-2}\right) =$

3. State the intervals on which the function $f(x) = \dfrac{\sqrt{5-x}}{e^x-1}$ is continuous.

4. Draw the graph of **one** function $f$, with domain $(-4, 4)$, meeting **all** of the following conditions.

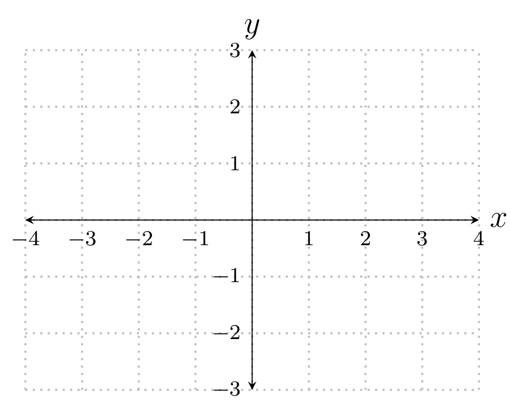
   (a) $f$ is continuous at all $x$ except $x = 1$ and $x = 2$.

   (b) $f(3) = 1$

   (c) $\lim\limits_{x\to 1} f(x) = -1$

   (d) $\lim\limits_{x\to 2^-} f(x) = 1$

   (e) $\lim\limits_{x\to 2^+} f(x) = 2$



Name: ______________________________ **Quiz 3 ◇** MATH 200

September 8, 2021

1. $\displaystyle\lim_{x\to 1} \frac{\sin(x^2-1)}{x^2-1} =$

2. $\displaystyle\lim_{x\to 0} \sin\left(\frac{\pi x}{6x-6x^2}\right) =$

3. State the intervals on which the function $f(x) = \dfrac{1}{\ln(x)}$ is continuous.

4. Draw the graph of **one** function $f$, with domain $(-4, 4)$, meeting **all** of the following conditions.

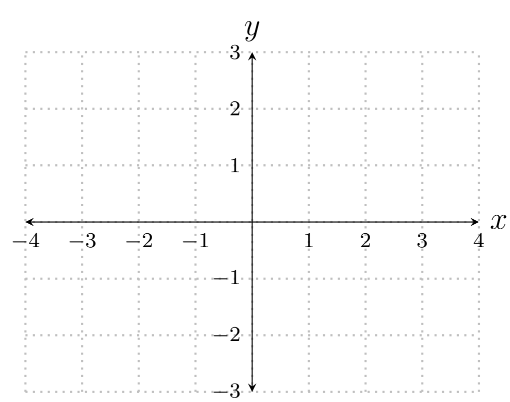
   (a) $f$ is continuous at all $x$ except $x = -1$ and $x = 1$.

   (b) $f(3) = 2$

   (c) $\displaystyle\lim_{x\to -1} f(x) = 2$

   (d) $\displaystyle\lim_{x\to 1^-} f(x) = 1$

   (e) $\displaystyle\lim_{x\to 1^+} f(x) = -1$



Name: ______________________________ Quiz 3 ♣ MATH 200

September 8, 2021

1. $\lim_{x \to 0} \dfrac{\sin(x) + x}{x} =$

2. $\lim_{x \to 3} \log_2 \left( \dfrac{x^2 + 2x - 15}{x - 3} \right) =$

3. State the intervals on which the function $f(x) = \sqrt{x^2 + 5}$ is continuous.

4. Draw the graph of **one** function $f$, with domain $(-4, 4)$, meeting **all** of the following conditions.

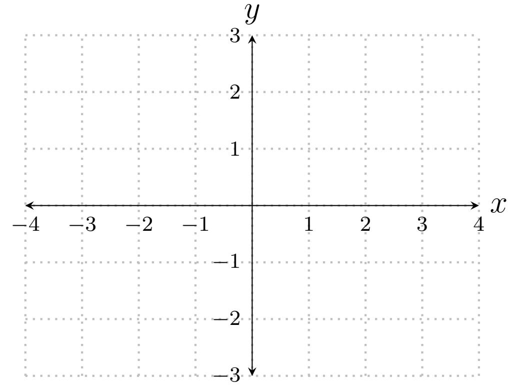
   (a) $f$ is continuous at all $x$ except at $x = 1$ and $x = 2$.

   (b) $f(3) = 1$

   (c) $\lim_{x \to 1} f(x) = -1$

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

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



Name: ______________________________ **QUIZ 3 ♠** MATH 200

September 8, 2021

1. $\lim_{x\to 0} \frac{\sin(3x)}{2x} =$

2. $\lim_{x\to \pi/6} \ln\left(\sin(x)+\frac{1}{2}\right) =$

3. State the intervals on which the function $f(x) = \frac{\sqrt{x+6}}{x^2-3x+2}$ is continuous.

4. Draw the graph of **one** function $f$, with domain $(-4, 4)$, meeting **all** of the following conditions.

   (a) $f$ is continuous at all $x$ except $x = -1$ and $x = 1$.

   (b) $f(3) = 2$

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

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

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