

Quiz 2: Practice Version

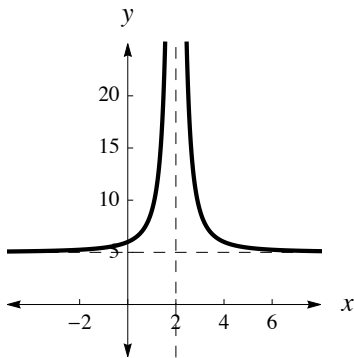
First & Last Name: _____ Class: _____

1. Is the function

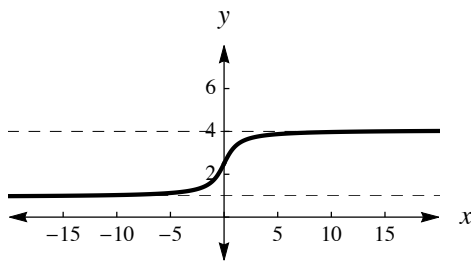
$$f(x) = \begin{cases} 2x^2 + 2 & x \geq 1 \\ -x^2 + 5 & x < 1 \end{cases}$$

continuous? Explain.

2. State the *domain* of the following function.



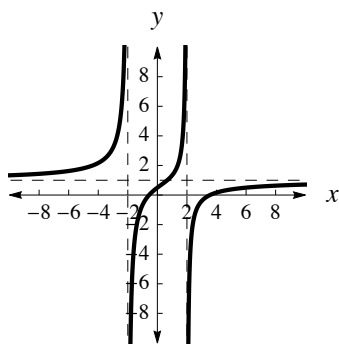
3. State the *range* of the following function.



4. Sketch a graph of a function with *asymptotes*

$$x = 3 \quad \text{and} \quad y = -2$$

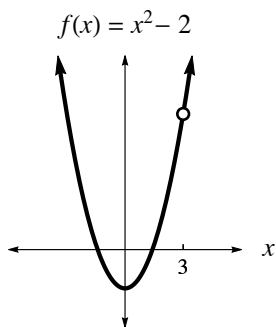
5. What are the equations of the *asymptotes* of the following function?



6. Sketch the graph of a function that has a *hole* and a *domain*: $x \geq 3$ and $x \neq 5$.

7. Sketch the graph of a function that has one *vertical asymptote* and a *domain*: $x < -2$ and $x \neq -4$.

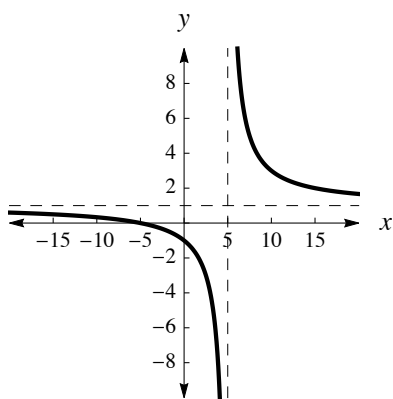
8. Write the *piecewise function* that makes the function below *continuous*.



9. Sketch the *rational function* $f(x) = \frac{x^2+6x+8}{x+4}$

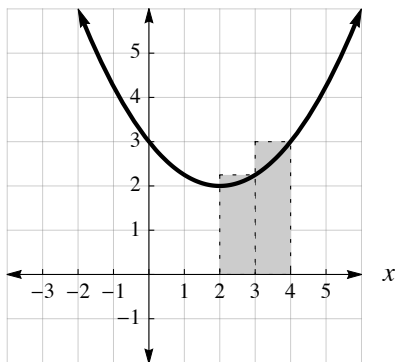
10. Sketch the *rational function* $g(x) = \frac{x^2-5x+7}{x+3}$

11. Write all the *approach statements* for the following function.



12. Approximate the area between the parabola (shown below) and the *x-axis* for $-2 \leq x \leq 4$ using *right-hand rectangles* with widths of 1. Two rectangles have been drawn for you.

$$f(x) = \frac{1}{4}(x-2)^2 + 2$$



Challenge Options (required for Honors)

13. Simplify $f(x) = \frac{x^2-2x-15}{x-5}$

14. Simplify $g(x) = \frac{x^2-2x-15}{x+5}$