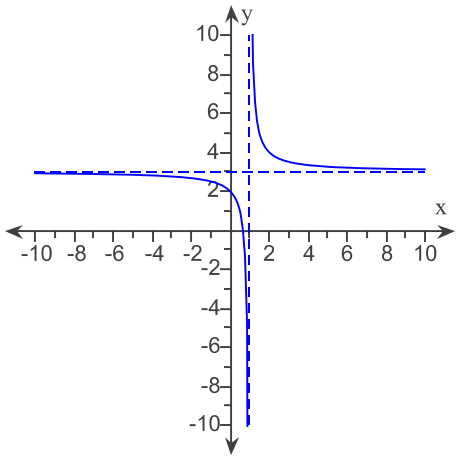
Student: _____	**Instructor:** Fred Khoury	**Assignment:** Quiz Sec 1.4
Date: _____	**Course:** Math 2312-1000 Precalculus (Fall - 2015)	
Time: _____	**Book:** Lial: College Algebra and Trigonometry, 4e	

1. Find the domain and range of the rational function graphed below.



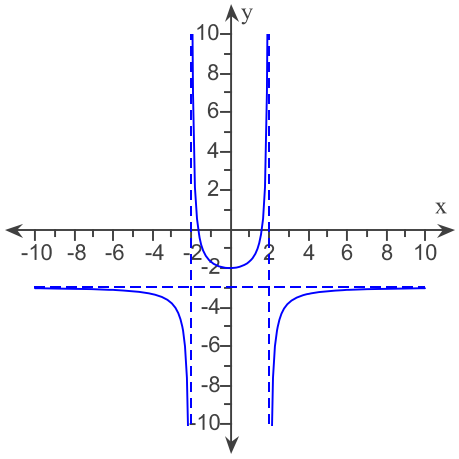
A. Domain: $(-\infty, 3) \cup (3, \infty)$
Range: $(-\infty, 1) \cup (1, \infty)$

B. Domain: $(-\infty, 1) \cup (1, \infty)$
Range: $(-\infty, \infty)$

C. Domain: $(-\infty, 1) \cup (1, \infty)$
Range: $(-\infty, 3) \cup (3, \infty)$

D. Domain: $(-\infty, \infty)$
Range: $(-\infty, 3) \cup (3, \infty)$

2. Find the horizontal and vertical asymptotes of the rational function graphed below.



A. Horizontal: $y = 0$
Vertical: $x = \pm 2$

B. Horizontal: none
Vertical: $x = \pm 2$

C. Horizontal: $y = -3$
Vertical: $x = \pm 2$

D. Horizontal: $y = \pm 2$
Vertical: $x = -3$

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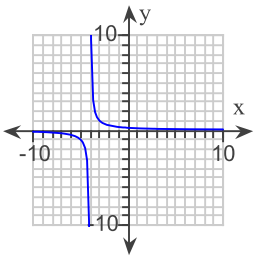
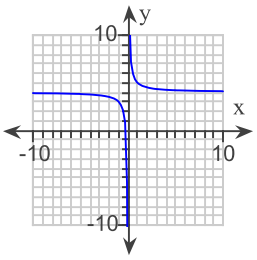
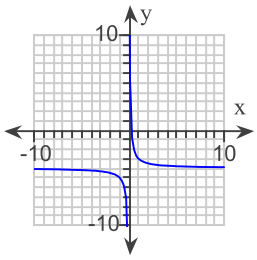
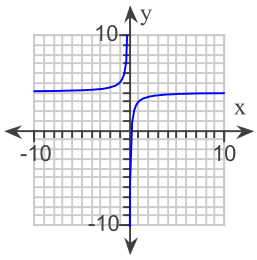
3. Graph the function.

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

A. 

B. 

C. 

D. 

4. Give the domain and range for the rational function. Use interval notation.

$$f(x) = \frac{1}{(x-5)^2} + 3$$

A. Domain: $(-\infty, 5) \cup (5, \infty)$; Range: $(-\infty, 0) \cup (0, \infty)$

B. Domain: $(-\infty, -5) \cup (-5, \infty)$; Range: $(-\infty, 3)$

C. Domain: $(-\infty, 3) \cup (3, \infty)$; Range: $(0, \infty)$

D. Domain: $(-\infty, 5) \cup (5, \infty)$; Range: $(3, \infty)$

5. Determine which of the rational functions given below has the following features.

x-intercepts: 5 and -5, y-intercepts: none, vertical asymptotes: $x = 0$ and $x = 2$, horizontal asymptote: $y = 1$

A. $f(x) = \dfrac{(x+5)(x-5)}{(x+2)}$

B. $f(x) = \dfrac{(x-5)(x+5)}{x(x-2)}$

C. $f(x) = \dfrac{(x+5)(x-5)}{x(x+2)}$

D. $f(x) = \dfrac{(x-5)(x+5)}{(x-2)^2}$

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6. Find any vertical asymptotes.

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

A. $x = 4$

B. None

C. $x = 2, x = -2$

D. $x = -4$

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7. Find any vertical asymptotes.

$$h(x) = \frac{3x - 5}{x^2 + 2x - 35}$$

A. $x = 5, x = -7$

B. $x = -5, x = 7$

C. $y = 3$

D. $y = 5, y = -7$

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8. Find the horizontal asymptote of the given function.

$$f(x) = \frac{4x^2 + 9}{4x^2 - 9}$$

A. $y = 1$

B. None

C. $y = -9$

D. $y = 9$

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9. Find the horizontal asymptote of the given function.

$$g(x) = \frac{x^2 + 8x - 2}{x - 2}$$

- A. $y = 8$
- B. None
- C. $y = -2$
- D. $y = 0$

10. Find the horizontal asymptote of the given function.

$$g(x) = \frac{x + 5}{x^2 - 5}$$

- A. None
- B. $y = 0$
- C. $y = 5$
- D. $y = 1$

11. Give the equation of the oblique asymptote, if any.

$$f(x) = \frac{x^2 + 8x - 6}{x - 3}$$

- A. $y = x + 11$
- B. $x = y + 11$
- C. $y = x + 5$
- D. None

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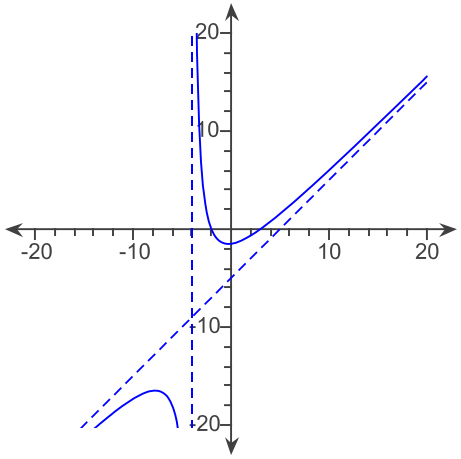
12. Identify any vertical, horizontal, or oblique asymptotes in the graph of y = f(x). State the domain of f.



A. Vertical: $x = -4$
Oblique: $y = x - 5$
Domain: $(-\infty, -4) \cup (-4, \infty)$

B. Vertical: $x = 4$
Oblique: $y = x + 5$
Domain: $(-\infty, 4) \cup (4, \infty)$

C. Vertical: $x = -4$
Oblique: $x = y - 5$
Domain: $(-\infty, -4) \cup (-4, \infty)$

D. Vertical: $x = 4$
Oblique: $y = x + 5$
Domain: $(-\infty, -4) \cup (-4, \infty)$