

Graphing Rational Functions - WKST 2

I. Sketch the graph of each function. (Skip the range for #4 and 8)

1. $g(x) = \frac{5x}{2x+3}$

2. $y = \frac{2-5x}{4x+5}$

3. $f(x) = \frac{3x^2-12x}{x^2-2x-3}$

4. $y = \frac{x^2}{x-3}$

5. $f(x) = \frac{1}{x} - 3$

6. $g(x) = \frac{6}{x^2+1}$

7. $y = \frac{x-6}{x^2-36}$

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

9. $f(x) = \frac{x^2-1}{x}$

10. $f(x) = \frac{2x^2-x-10}{x+2}$

II. State the domain.

11.

$$y = \frac{3x^2}{x^2-9}$$

12.

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

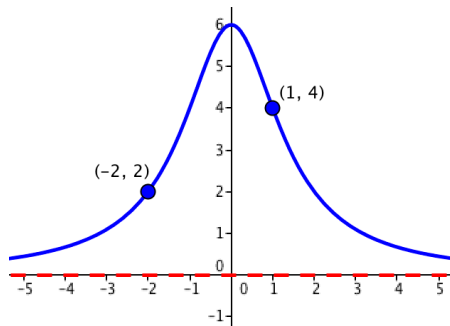
13.

$$y = \frac{3x^2+10x-8}{x^2+4}$$

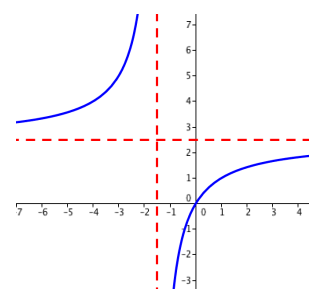
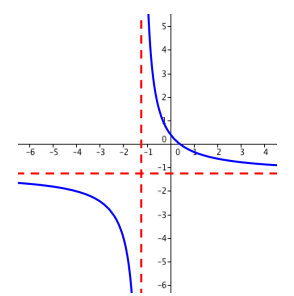
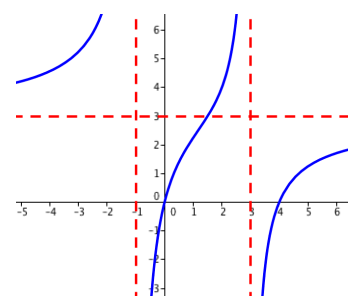
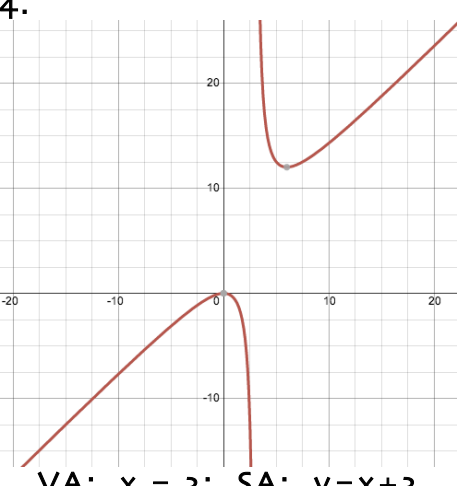
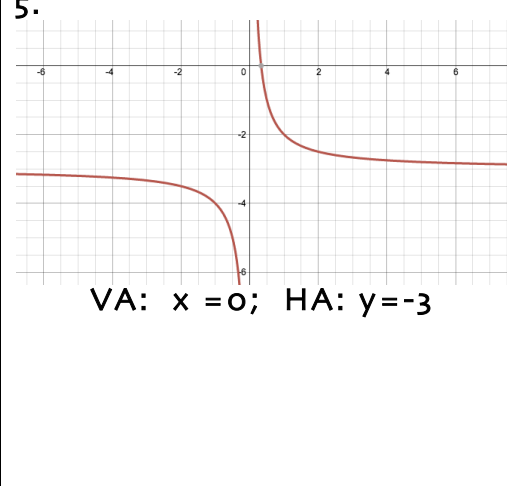
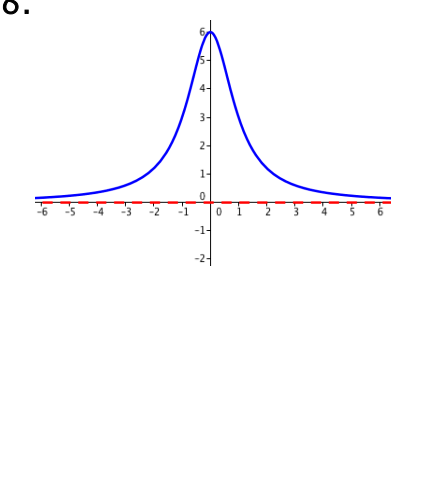
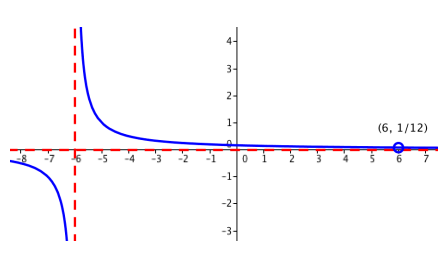
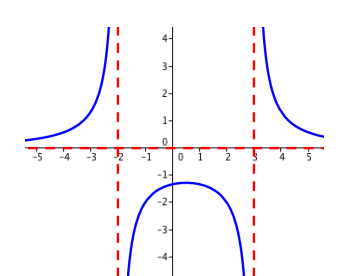
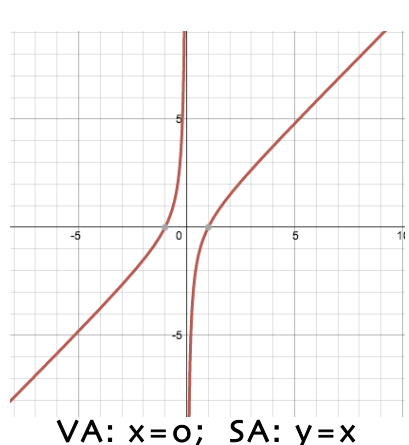
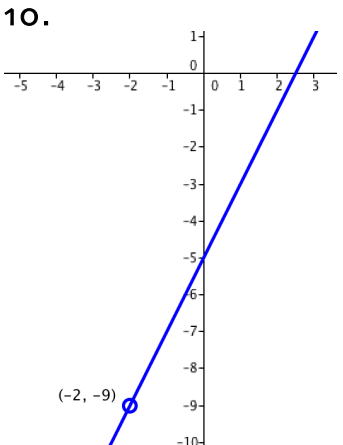
III The graph of a function in the form $f(x) = \frac{a}{x^2+b}$ is shown.

Find the values of a and b.

14.



ANSWERS

| | | | |
|---|--|--|---|
| <p>1.</p>  | <p>2.</p>  | <p>3.</p>  | |
| <p>4.</p>  <p>VA: $x = 3$; SA: $y = x + 3$</p> | <p>5.</p>  <p>VA: $x = 0$; HA: $y = -3$</p> | <p>6.</p>  | |
| <p>7.</p>  | <p>8.</p>  | | |
| <p>9.</p>  <p>VA: $x = 0$; SA: $y = x$</p> | <p>10.</p>  | | |
| <p>11. $\{x x \neq \pm 3\}$</p> | <p>12. $\left\{x \mid x \neq -\frac{3}{2}, 2\right\}$</p> | <p>13. $\{x x \in \mathbb{R}\}$</p> | <p>14. $a = 12, b = 2$</p> |