

1. $x = 0, 1, -4$

2. $x = 0, 2, -6$

3. $x = -5, 6$

4. $x = \pm 3$

5. $x = -4, 1$

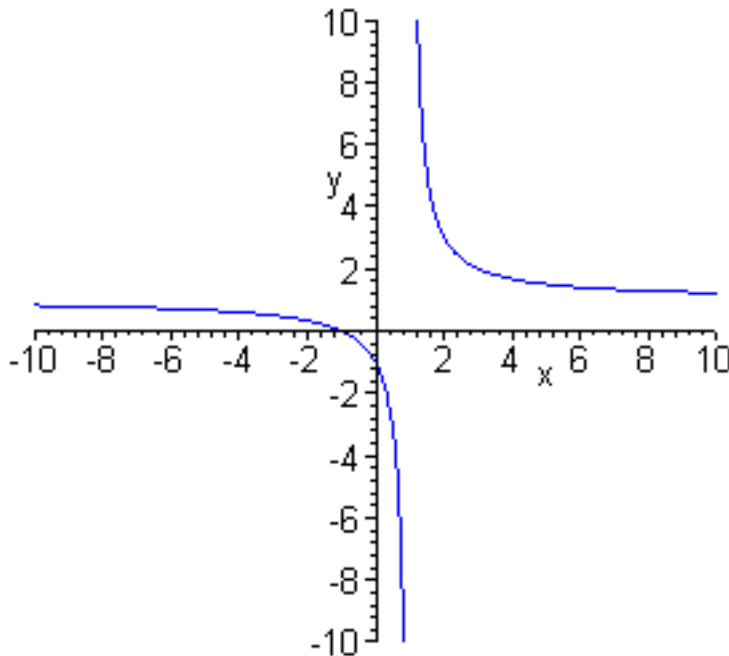
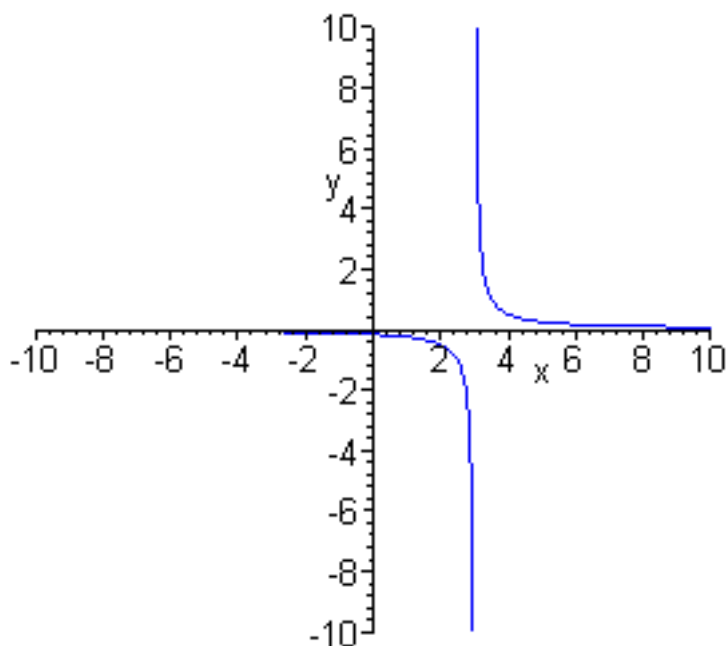
6. $x = -4 \pm \sqrt{3}$

7. $y = \frac{1}{2x-6}$

Domain: $x \neq 3$
 x -intercept: None
 y -intercept: $y = -\frac{1}{6}$
 Vertical asymptote: $x = 3$
 Horizontal asymptote: $y = 0$

8. $y = \frac{x+1}{x-1}$

Domain: $x \neq 1$
 x -intercept: $x = -1$
 y -intercept: $y = -1$
 Vertical asymptote: $x = 1$
 Horizontal asymptote: $y = 1$

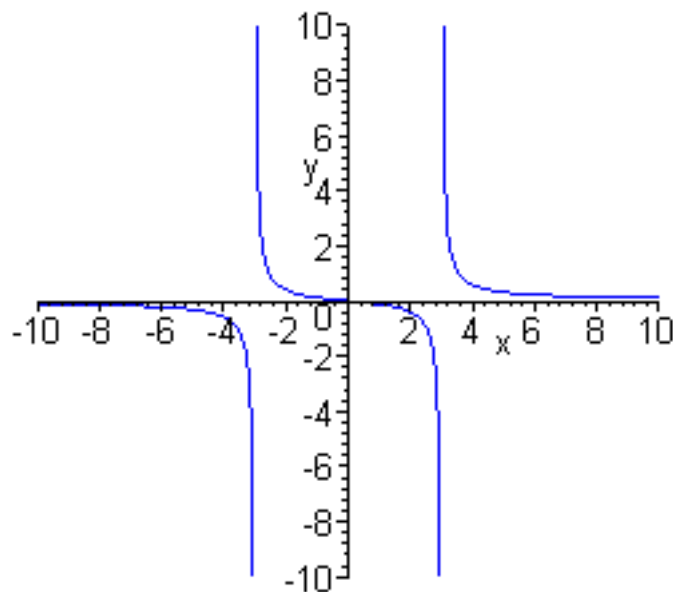
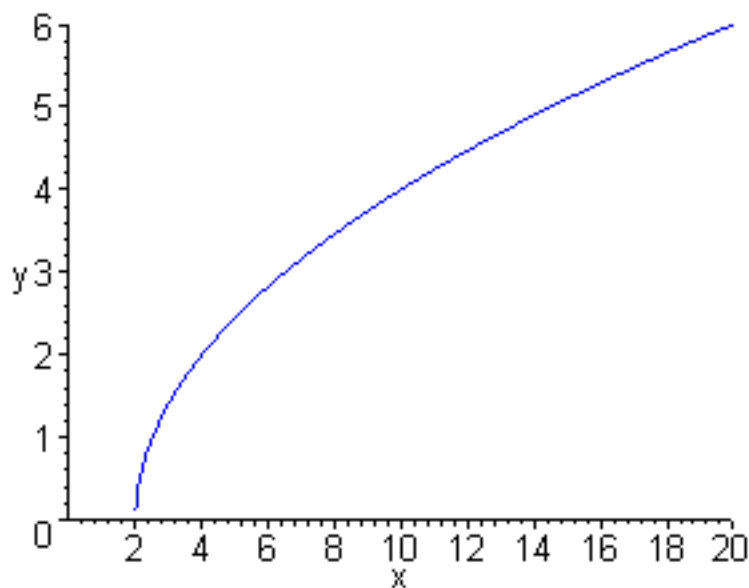


9. $y = \sqrt{2x-4}$

Domain: $x \geq 2$
 x -intercept: $x = 2$
 y -intercept: None

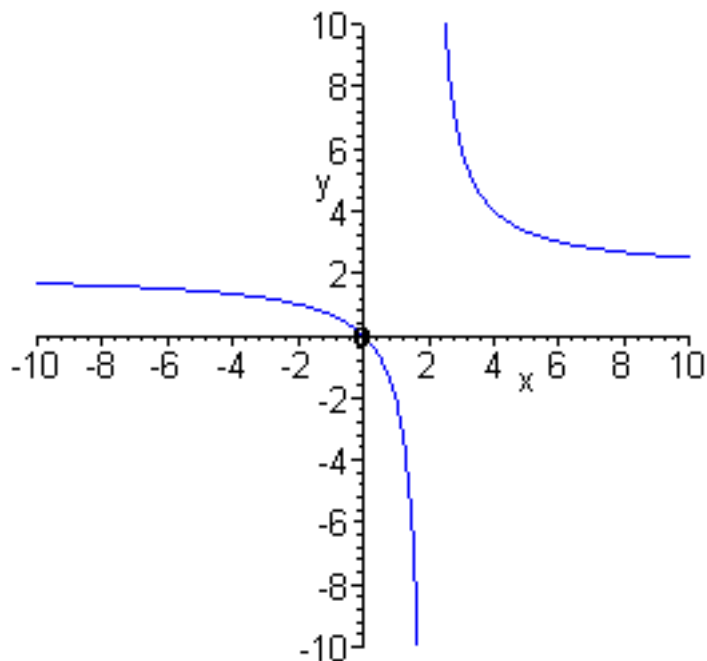
10. $y = \frac{x}{x^2-9}$

Domain: $x \neq \pm 3$
 x -intercept: $x = 0$
 y -intercept: $y = 0$
 Vertical asymptote: $x = \pm 3$
 Horizontal asymptote: $y = 0$



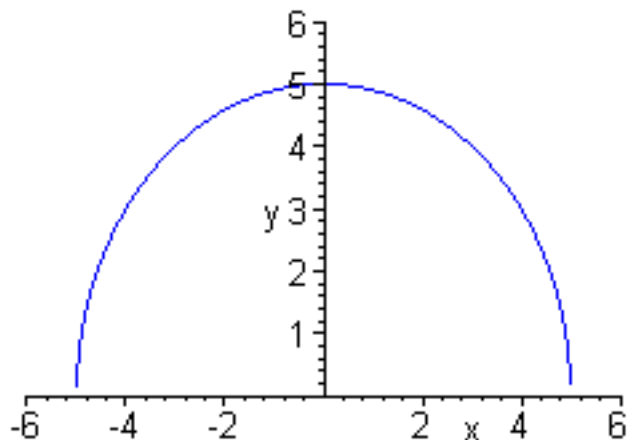
$$11. y = \frac{2x^2}{x^2 - 2x}$$

Domain: $x \neq 0, 2$
 x -intercept: None
 y -intercept: None
Vertical asymptote: $x = 2$
Horizontal asymptote: $y = 2$



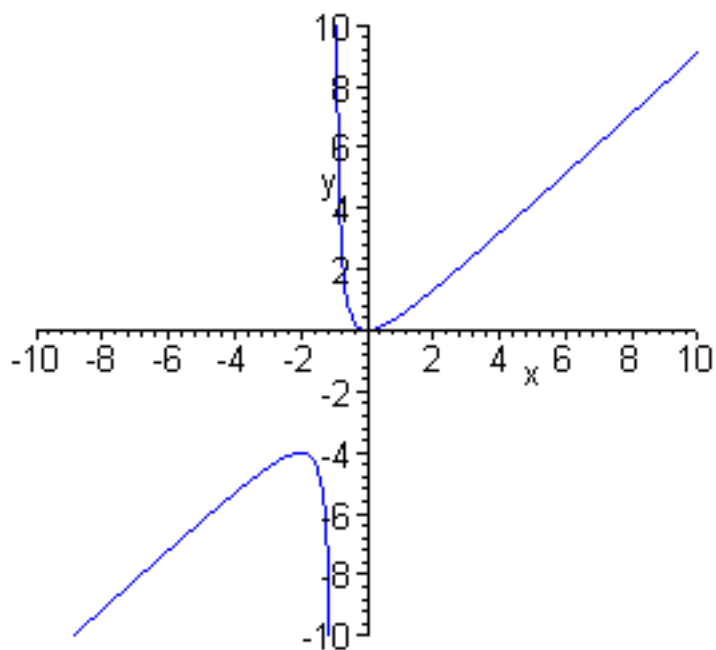
$$12. y = \sqrt{25 - x^2}$$

Domain: $-5 \leq x \leq 5$
 x -intercept: $x = \pm 5$
 y -intercept: $y = 5$



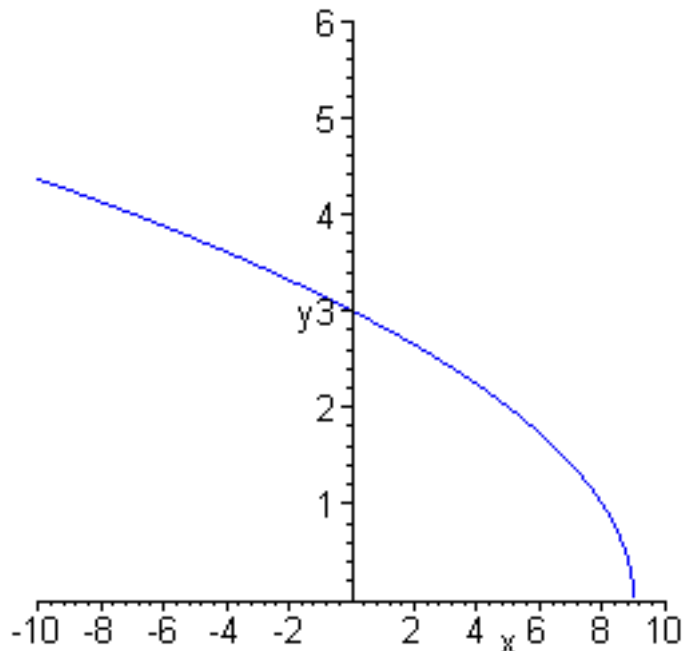
$$13. y = \frac{x^2}{x + 1}$$

Domain: $x \neq -1$
 x -intercept: $x = 0$
 y -intercept: $y = 0$
Vertical asymptote: $x = -1$
Note: Approaches line $y = x$



$$14. y = \sqrt{9 - x}$$

Domain: $x \leq 9$
 x -intercept: $x = 9$
 y -intercept: $y = 3$



15. $y = \frac{x^2 + 1}{x^2 - 4x + 3}$

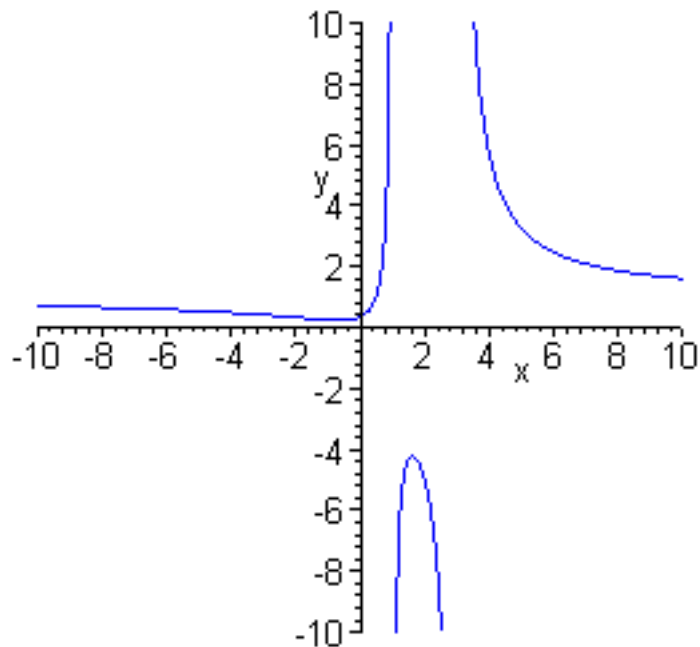
Domain: $x \neq 1, 3$

x -intercept: None

y -intercept: $y = \frac{1}{3}$

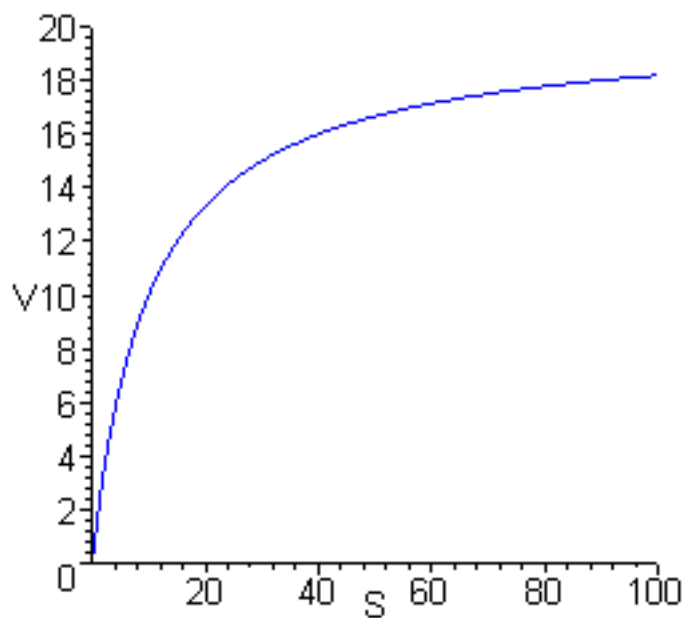
Vertical asymptote: $x = 1, 3$

Horizontal asymptote: $y = 1$



16. a. $V = \frac{20[S]}{10 + [S]}$

Horizontal asymptote: $V = 20$

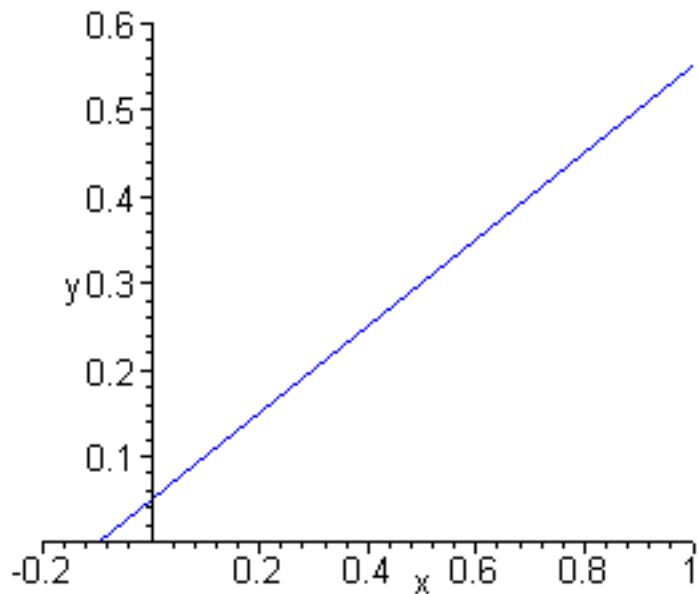


b. $y = \frac{1}{2}x + \frac{1}{20}$

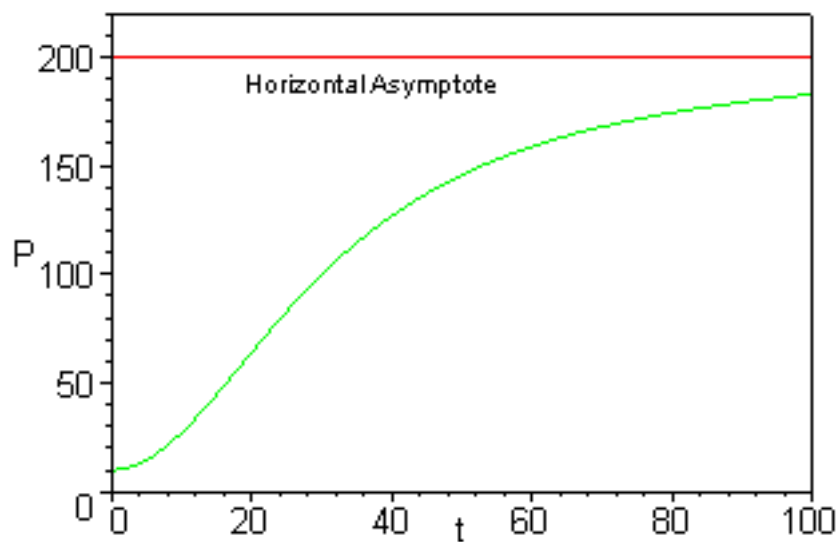
x -intercept: $x = -\frac{1}{10}$

y -intercept: $y = \frac{1}{20}$

slope = $\frac{1}{2}$

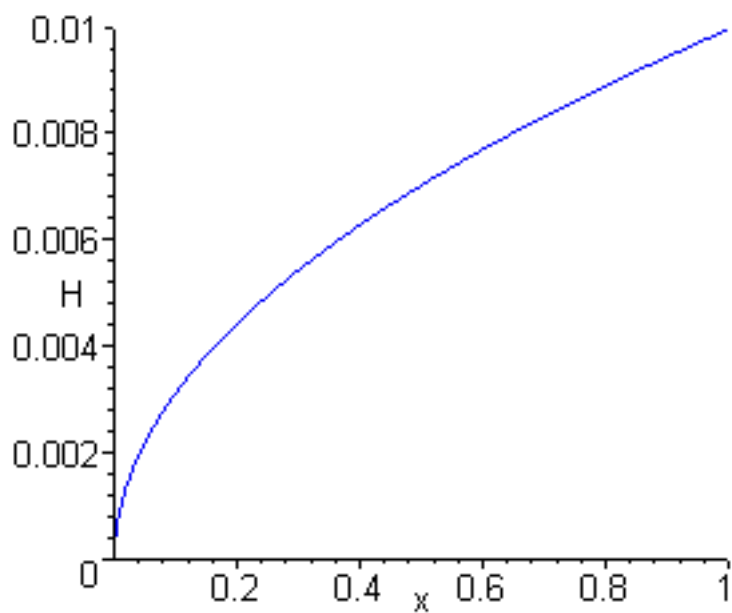


17. a. $P(0) = 10$ and $P(10) = \frac{30}{1.1} = 27.27$.



18. a. $[H^+] = 0.003113$

b.



19. a. The domain is $0 \leq y \leq 9$. The graph is below.

b. $y = 5$ meters.

