

**Advanced Functions****Logarithmic****Log Vertical Asymptotes**

1. *vertical asymptotes*  $\ln(x)$
2. *vertical asymptotes*  $\log_2(x)$
3. *vertical asymptotes*  $\log_3(x)$
4. *vertical asymptotes*  $\log_4(x - 1)$
5. *vertical asymptotes*  $2 + \log_2(4 + x)$
6. *vertical asymptotes*  $\ln(e + x)$
7. *vertical asymptotes*  $-\log_2(x - 1)$
8. *vertical asymptotes*  $\log_2(2 + x) - 4$
9. *vertical asymptotes*  $2\log_{10}(x)$
10. *vertical asymptotes*  $2\log_2(2 + x) - 1$

## Answers

### Advanced Functions

#### Logarithmic

#### Log Vertical Asymptotes

1.  $x = 0$

2.  $x = 0$

3.  $x = 0$

4.  $x = 1$

5.  $x = -4$

6.  $x = -e$

7.  $x = 1$

8.  $x = -2$

9.  $x = 0$

10.  $x = -2$