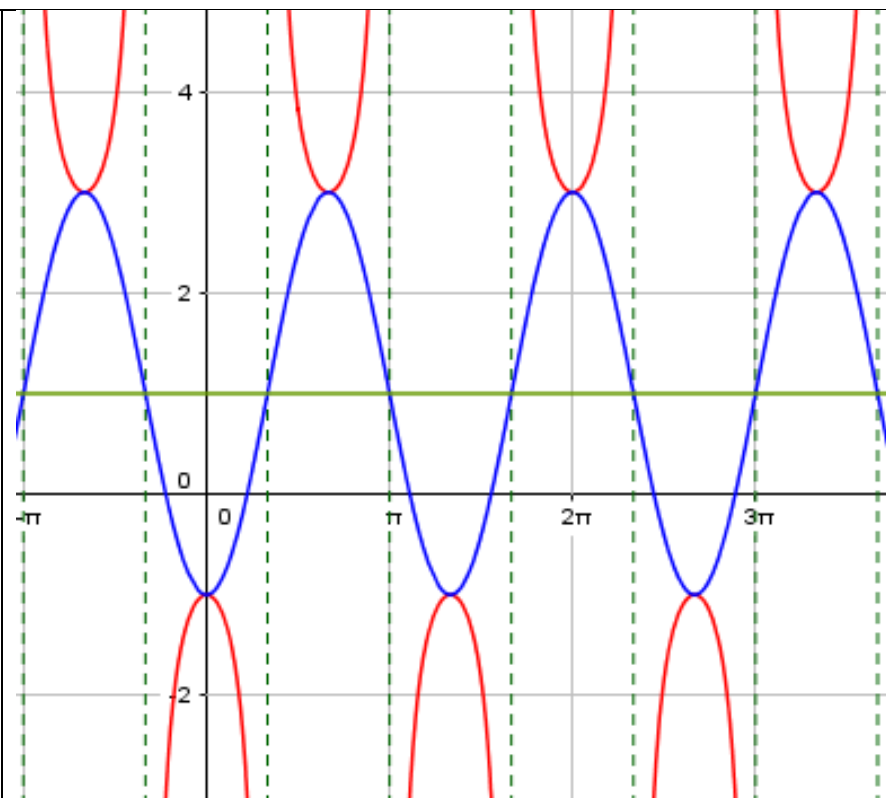


Graph the following secx functions. Identify the periods of the functions, the range, the vertical asymptotes.

$$f(x) = 2 \sec\left(\frac{3}{2}x - 3\pi\right) + 1$$



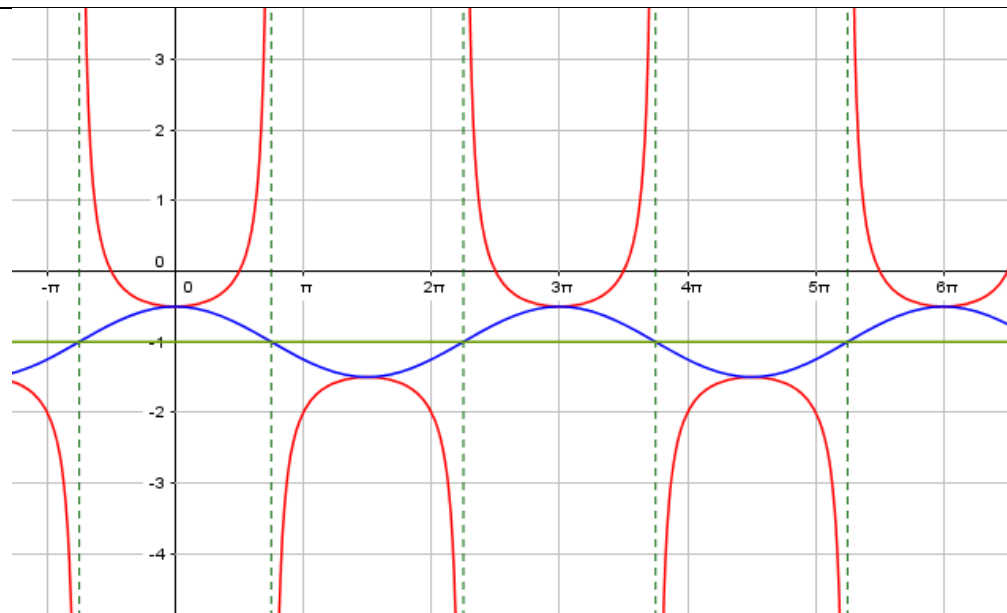
period: $\frac{4\pi}{3}$

range:

$$(-\infty, -1] \cup [3, \infty)$$

V.A.s: $x = \frac{7\pi}{3} + \frac{2\pi k}{3}$

$$f(x) = -\frac{1}{2} \sec\left(\frac{2}{3}x - \pi\right) - 1$$



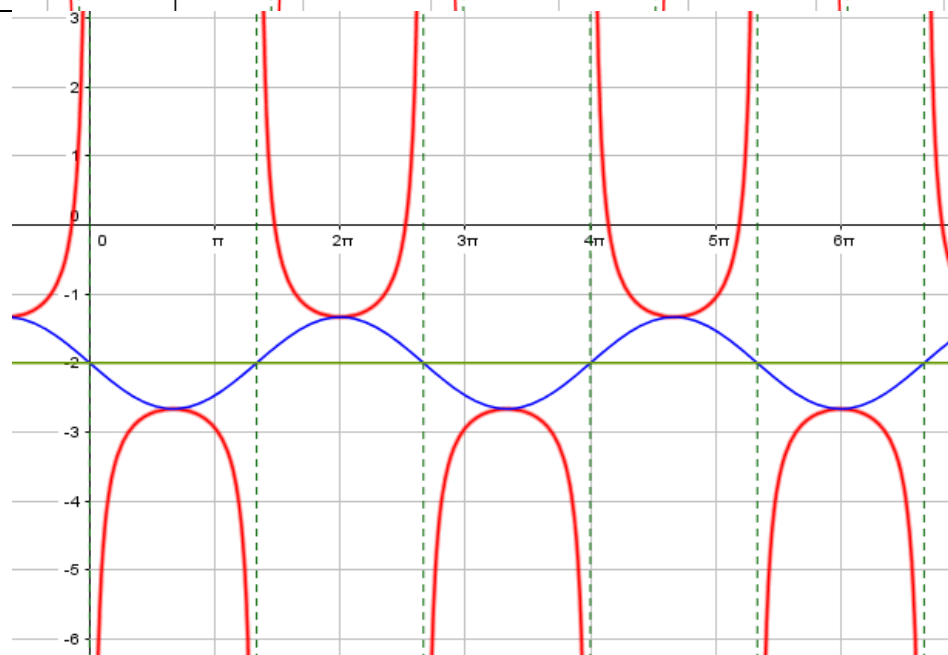
period : 3π

range:

$$\left(-\infty, -\frac{3}{2}\right] \cup \left[-\frac{1}{2}, \infty\right)$$

$$\text{V.A.s : } x = \frac{9\pi}{4} + \frac{3\pi k}{2}$$

$$f(x) = \frac{2}{3} \sec\left(\frac{3}{4}x - \frac{3}{2}\pi\right) - 2$$



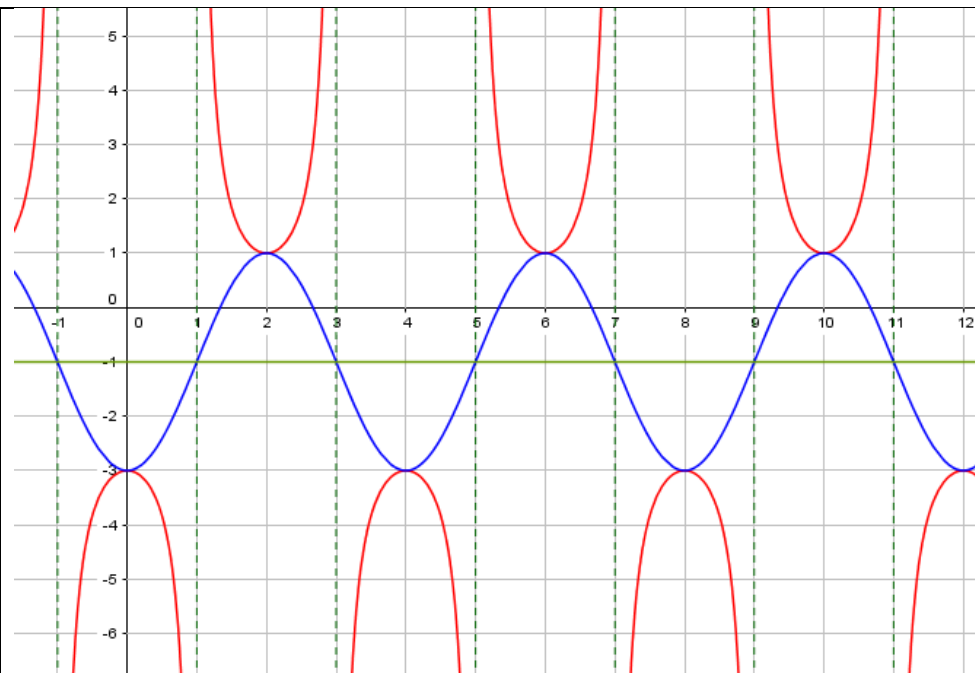
period : $\frac{8\pi}{3}$

range:

$$\left(-\infty, -\frac{8}{3}\right] \cup \left[-\frac{4}{3}, \infty\right)$$

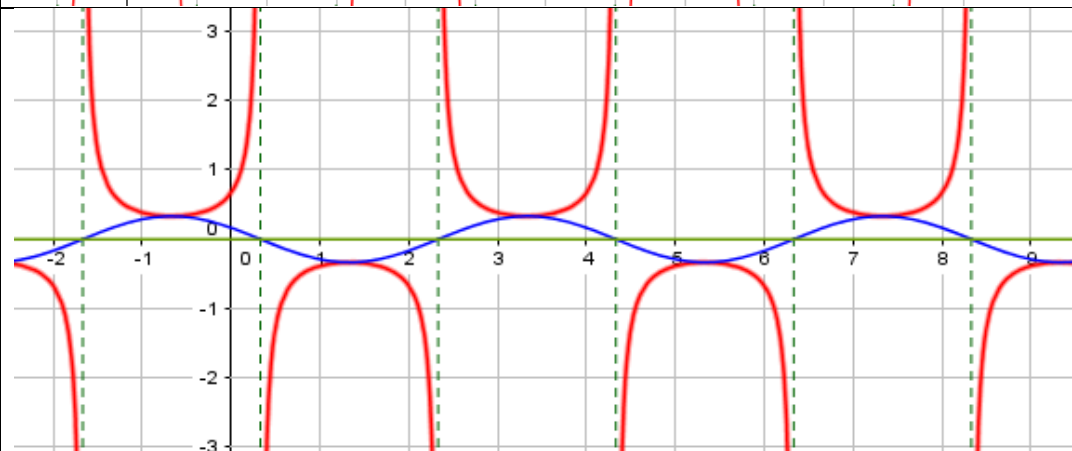
$$\text{V.A.s : } x = \frac{9\pi}{4} + \frac{3\pi k}{2}$$

$$f(x) = 2 \sec\left(\frac{\pi}{2}x - \pi\right) - 1$$



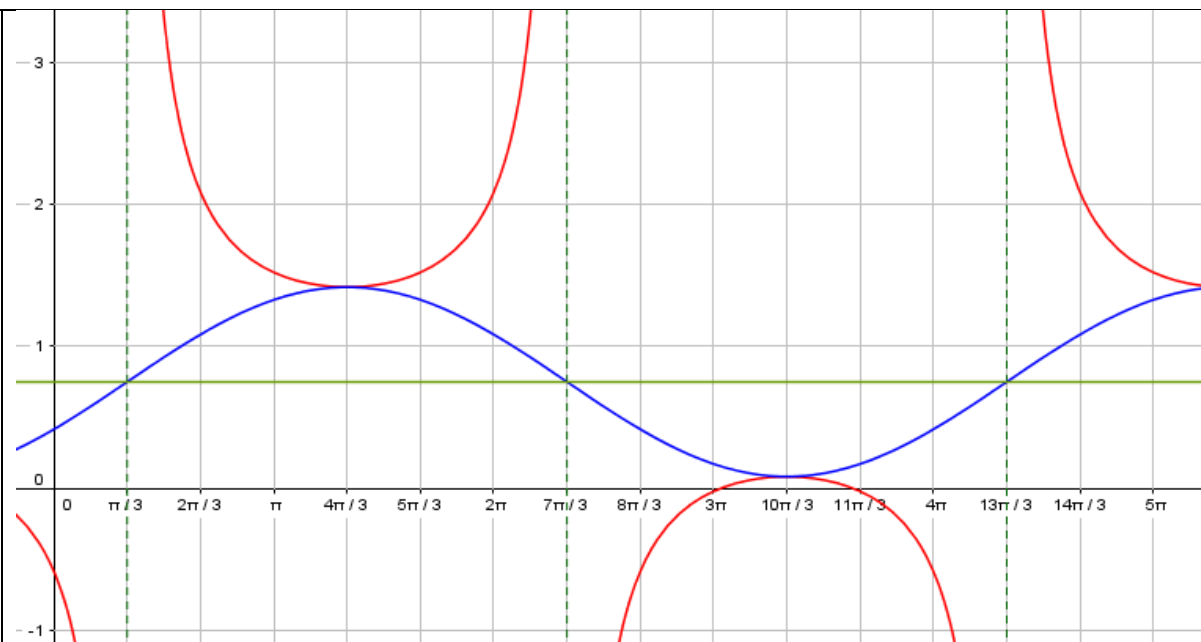
period : 4
range:
 $(-\infty, -3] \cup [1, \infty)$
V.A.s : $x = 3 + 2k$

$$f(x) = \frac{1}{3} \sec\left(\frac{\pi}{2}x + \frac{\pi}{3}\right)$$



period : 4
range:
 $(-\infty, -\frac{1}{3}] \cup [\frac{1}{3}, \infty)$
V.A.s : $x = \frac{1}{3} + 2k$

$$f(x) = -\frac{2}{3} \sec\left(\frac{1}{2}x + \frac{\pi}{3}\right) + \frac{3}{4}$$



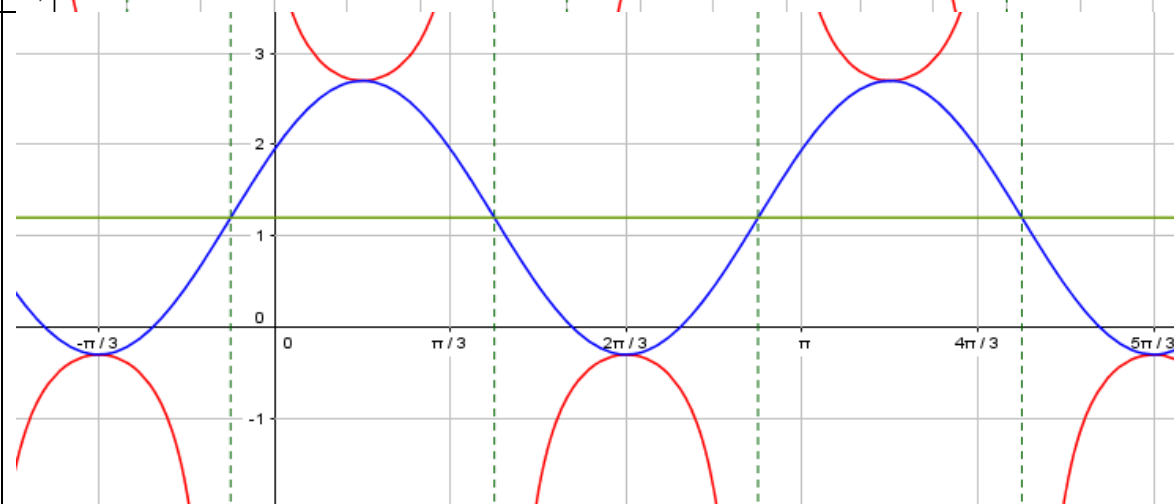
period : 4π

range:

$$\left(-\infty, \frac{1}{12}\right] \cup \left[\frac{17}{12}, \infty\right)$$

$$\text{V.A.s : } x = \frac{\pi}{3} + 2\pi k$$

$$f(x) = -\frac{3}{2} \sec\left(2x + \frac{2\pi}{3}\right) + \frac{6}{5}$$



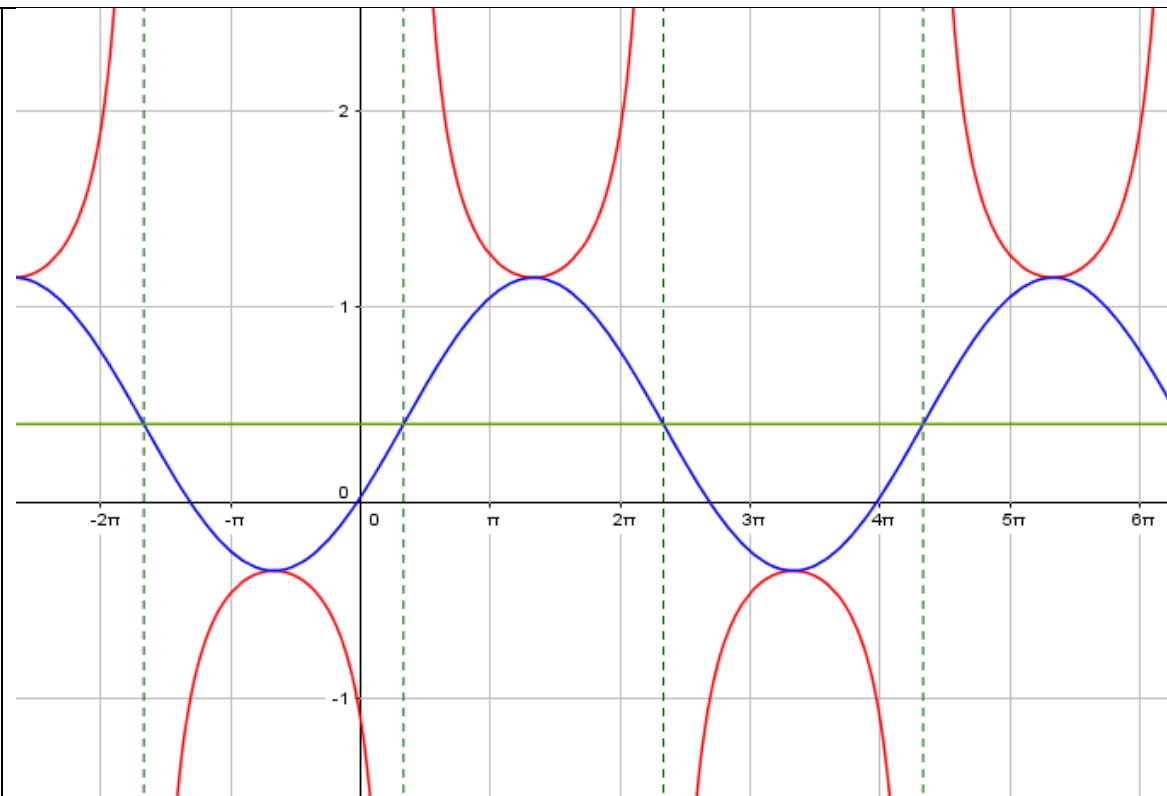
period : π

range:

$$\left(-\infty, -\frac{3}{10}\right] \cup \left[\frac{27}{10}, \infty\right)$$

$$\text{V.A.s : } x = -\frac{\pi}{12} + \frac{\pi k}{2}$$

$$f(x) = -\frac{3}{4} \sec\left(\frac{x}{2} + \frac{\pi}{3}\right) + \frac{2}{5}$$



period : 4π

range:

$$\left(-\infty, -\frac{7}{20}\right] \cup \left[\frac{23}{20}, \infty\right)$$

$$\text{V.A.s : } x = \frac{\pi}{3} + 2\pi k$$