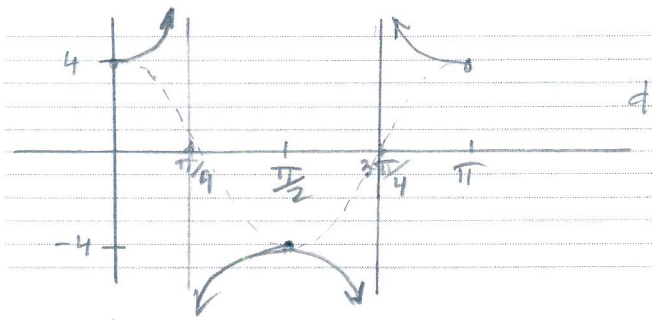
Trig Graphing WS
Secant Graphs

Name Fruston

Graph one complete period for each function and give the domain and range (in interval notation) of that period.

1) $y = 4\sec 2x$

$2x = 0$
$x = 0$
$2x = 2\pi$
$x = \pi$

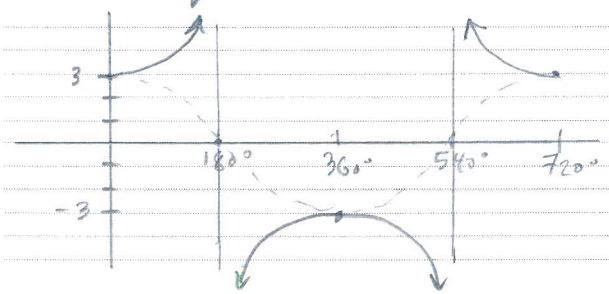


period = 2π
dom: $[0, \frac{\pi}{4}) \cup (\frac{\pi}{4}, \frac{3\pi}{4}) \cup (\frac{3\pi}{4}, \pi]$
range: $(-\infty, -4] \cup [4, \infty)$

2) $y = 3\sec\frac{\theta}{2}$

$\frac{\theta}{2} = 0$
$\theta = 0$

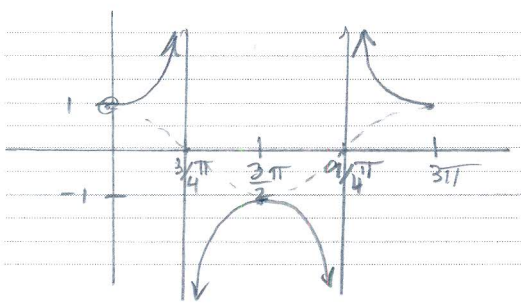
$\frac{\theta}{2} = 360°$
$\theta = 720°$



period = $720°$
dom: $[0, 180°) \cup (180°, 540°) \cup (540°, 720°]$
range: $(-\infty, -3] \cup [3, \infty)$

3) $y = \sec\frac{2x}{3}$

$\frac{2x}{3} = 0$
$x = 0$
$\frac{2x}{3} = 2\pi$
$x = 3\pi$

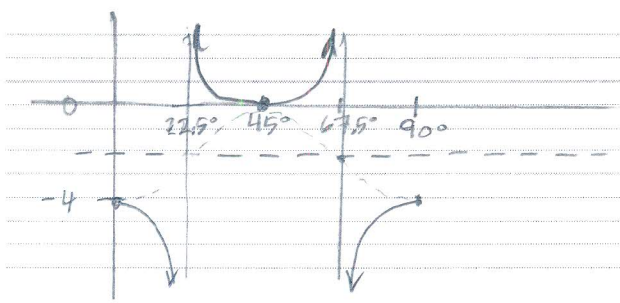


period = 3π
dom: $[0, \frac{3}{4}\pi) \cup (\frac{3}{4}\pi, \frac{9}{4}\pi) \cup (\frac{9}{4}\pi, 3\pi]$
range: $(-\infty, -1] \cup [1, \infty)$

4) $y = -2\sec 4\theta - 2$

$4\theta = 0$
$\theta = 0$

$4\theta = 360°$
$\theta = 90°$

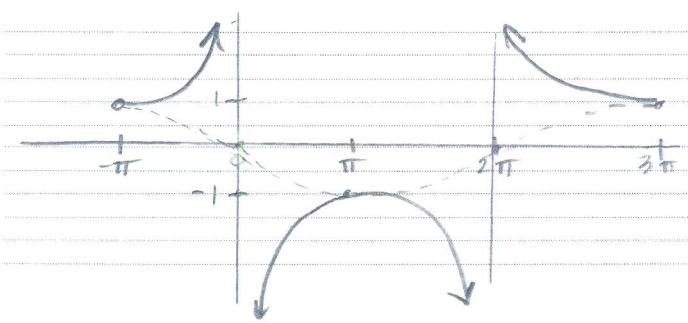


period = $90°$
dom: $[0, \frac{45°}{2}) \cup (\frac{45°}{2}, \frac{135°}{2}) \cup (\frac{135°}{2}, 90°]$
range: $(-\infty, -4] \cup [0, \infty)$

5) $y = \sec\left(\frac{x}{2} + \frac{\pi}{2}\right)$

$\frac{x}{2} + \frac{\pi}{2} = 0$
$x = -\pi$

$\frac{x}{2} + \frac{\pi}{2} = 2\pi$
$x = 3\pi$



period = 4π
dom: $[-\pi, \pi) \cup (\pi, 2\pi) \cup (2\pi, 3\pi]$
range: $(-\infty, -1] \cup [1, \infty)$