

Trig Graphing WS
Cosecant Graphs

Name _____

* graph sin then cos.
x = radian $\theta = \text{degrees}$

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

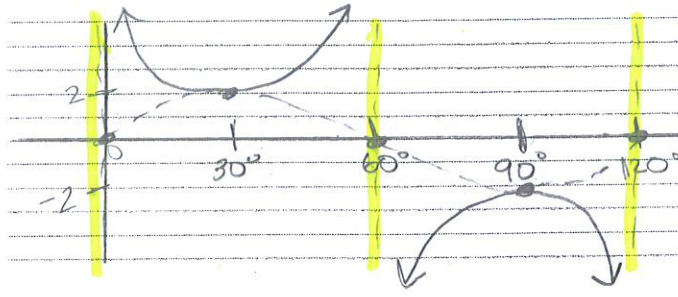
1) $y = 2 \csc 3\theta$

no vs
amp = 2

$3\theta = 0$ $3\theta = 360$
 $\theta = 0^\circ$ $\theta = 120^\circ$

Period = 120°

* graph sin then csc



D: $(0, 60^\circ) \cup (60^\circ, 120^\circ)$
R: $(-\infty, -2] \cup [2, \infty)$

2) $y = \frac{1}{2} \csc \frac{x}{3}$

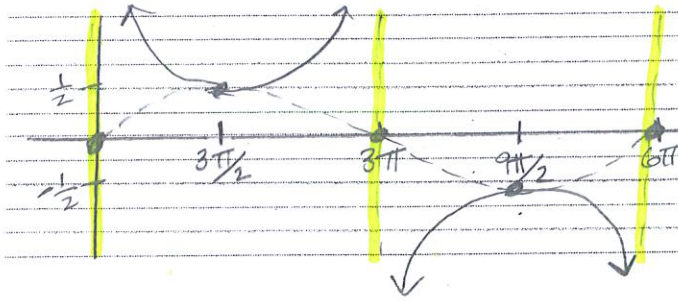
no vs
amp $\frac{1}{2}$

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

$x = 0$ $x = 6\pi$

Period = 6π

* graph sin then csc



D: $(0, 3\pi) \cup (3\pi, 6\pi)$
R: $(-\infty, -\frac{1}{2}] \cup [\frac{1}{2}, \infty)$

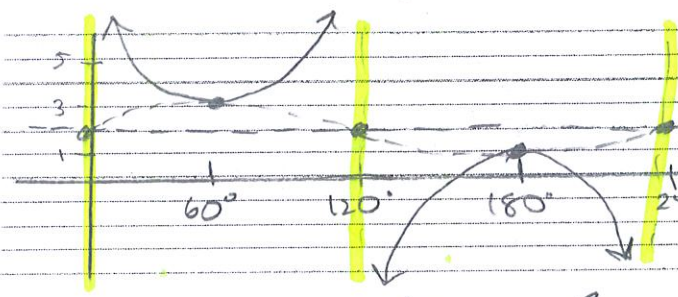
3) $y = \csc \frac{3\theta}{2} + 2$

vs = 2
amp = 1

$\frac{3\theta}{2} = 0$ $\frac{3\theta}{2} = 360^\circ$
 $\theta = 0^\circ$ $\theta = 360^\circ (\frac{2}{3})$
 $\theta = 240^\circ$

Period = 240°

Graph sin then csc



D: $(0, 120^\circ) \cup (120^\circ, 240^\circ)$
R: $(-\infty, 1] \cup [3, \infty)$

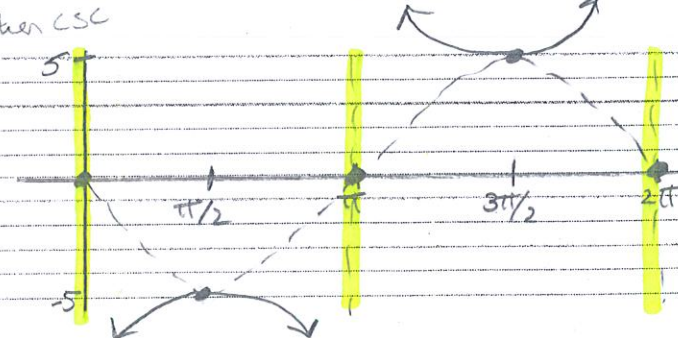
4) $y = -5 \csc x$

reflect x-axis
no vs
amp = 5

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

period = 2π

graph sin then csc



D: $(0, \pi) \cup (\pi, 2\pi)$
R: $(-\infty, -5] \cup [5, \infty)$

5) $y = -\csc(x - \frac{\pi}{4})$

reflect x-axis

$x - \frac{\pi}{4} = 0$ $x - \frac{\pi}{4} = 2\pi$

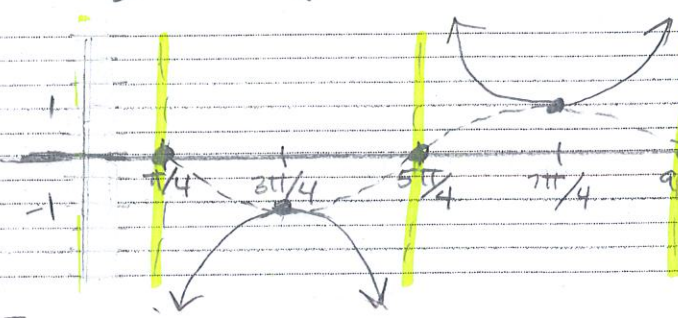
$x = \frac{\pi}{4}$ $x = \frac{8\pi}{4} + \frac{\pi}{4} = \frac{9\pi}{4}$

Period = $\frac{9\pi}{4} - \frac{\pi}{4} = \frac{8\pi}{4} = 2\pi$

graph sin then csc

$\frac{\pi}{4} + \frac{4\pi}{4} = \frac{5\pi}{4}$

$\frac{\pi}{4} + \frac{\pi}{4} = \frac{\pi}{2} + \frac{2\pi}{4} = \frac{3\pi}{4}$



D: $(\frac{\pi}{4}, \frac{5\pi}{4}) \cup (\frac{5\pi}{4}, \frac{9\pi}{4})$
R: $(-\infty, -1] \cup [1, \infty)$