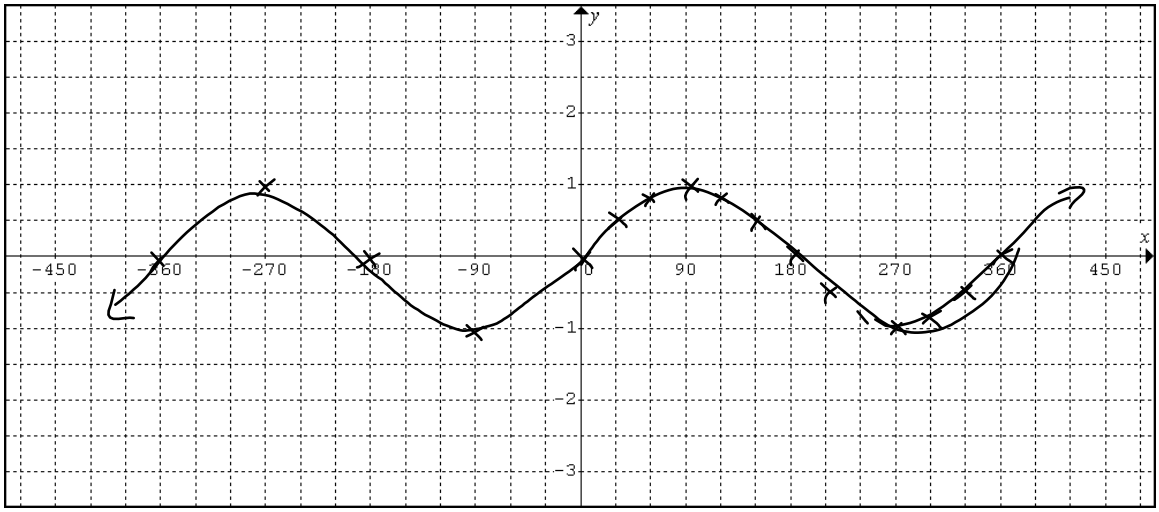
MCT 4C
Handout

Mr. Kempe
Unit 3, Lesson 13

Graphs of Trig Functions

x (degrees)	0	30	60	90	120	150	180	210	240	270	300	330	360
$f(x) = \sin x$	0	0.5	0.87	1	0.87	0.5	0	-0.5	-0.87	-1	-0.87	-0.5	0



1. State the domain and range for $f(x)$.

D $\{x \in \mathbb{R}\}$

R: $\{-1 \le y \le 1, y \in \mathbb{R}\}$

2. For what values of the function is $f(x)$ increasing? decreasing?

inc → -90° to 90°, 270° to 450°, etc

dec → -270° to -90°, 90° to 270°, etc

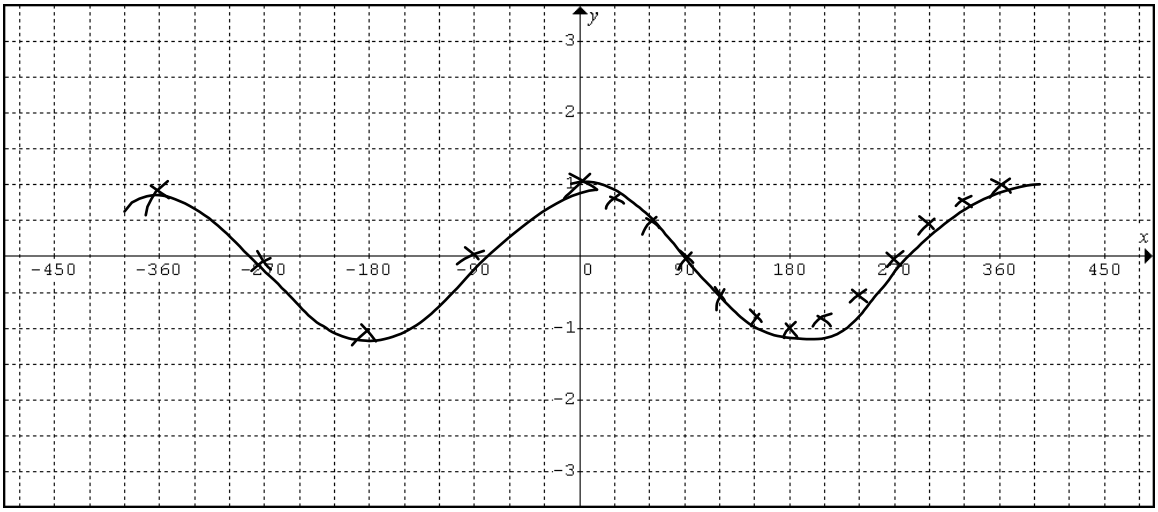
3. Are there any asymptotes of $f(x)$?

No

4. Does $f(x)$ have even or odd symmetry?

Odd Symmetry (rotate the graph at (0,0))

x (degrees)	0	30	60	90	120	150	180	210	240	270	300	330	360
$f(x)=\cos x$	1	0.87	0.5	0	-0.5	-0.87	-1	-0.87	-0.5	0	0.5	0.87	1



1. State the domain and range for $f(x)$.

   D $\{x \in \mathbb{R}\}$

   R $\{-1 \leq y \leq 1, y \in \mathbb{R}\}$

2. For what values of the function is $f(x)$ increasing? decreasing?

   inc -> -180° to 0°, 180° to 360°, etc

   dec -> -360° to -180°, 0° to 180°, etc

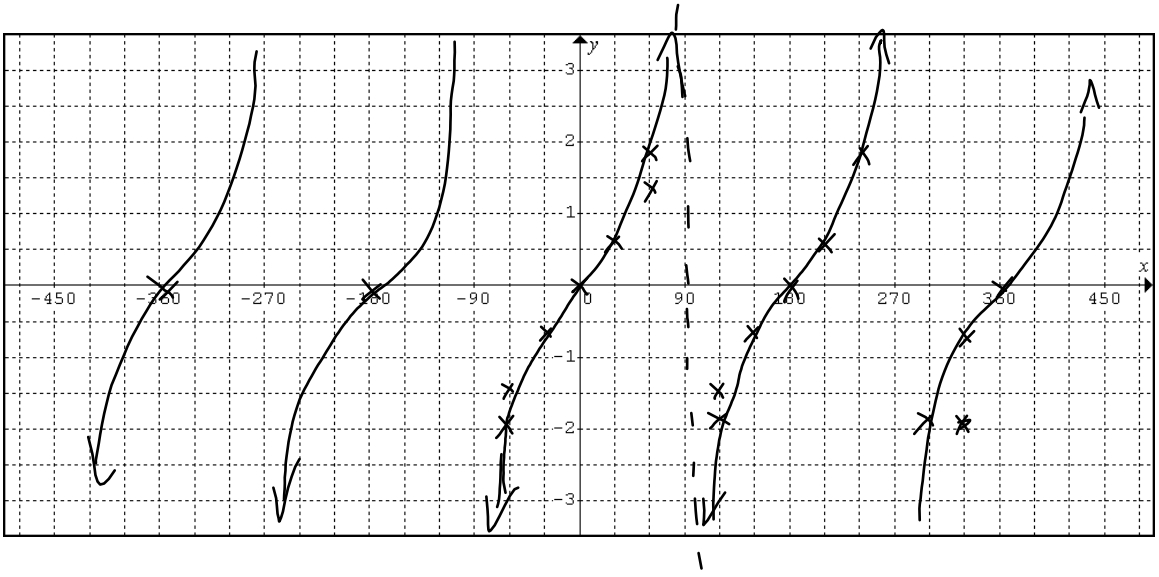
3. Are there any asymptotes of $f(x)$?

   No

4. Does $f(x)$ have even or odd symmetry?

   Even (fold over the y-axis)

x (degrees)	0	30	60	90	120	150	180	210	240	270	300	330	360
$f(x) = \tan x$	0	0.57	1.73	× V.A.	-1.73	-0.57	0	0.57	1.73	× V.A.	-1.73	-0.57	0



1. State the domain and range for $f(x)$.

   D $\{x \in \mathbb{R},\ x \neq -270°, -90°, 90°, 270°, \text{etc}\}$
   R $\{y \in \mathbb{R}\}$

2. For what values of the function is $f(x)$ increasing? decreasing?

   always increasing, except at the asymptotes

3. Are there any asymptotes of $f(x)$?

   Yes $(-270°, -90°, 90°, 270°$ etc $)$

4. Does $f(x)$ have even or odd symmetry?

   Odd

Practice: pg. 26 #7, 8, 11, 12