Section 1.3
Trigonometric Functions

TRIG FUNCTION DEFINITIONS

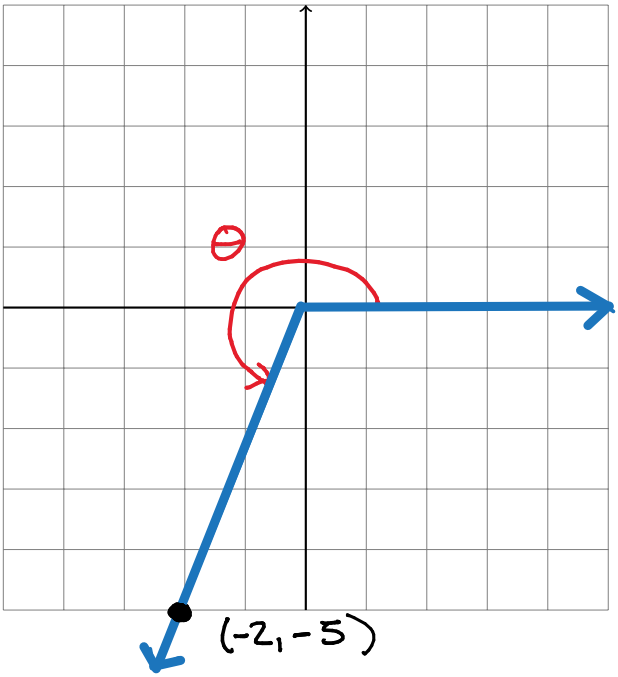
1. Sketch the angle θ CCW from the positive x-axis (this is called the standard position for θ in the book) given from the point. Then fill in the values for the six trigonometric functions.

$x = -2$
$y = -5$
$r = \sqrt{(-2)^2 + (-5)^2}$
$= \sqrt{4+25}$
$= \sqrt{29}$

Trig functions	
$\sin\theta$	$-5/\sqrt{29}$
$\cos\theta$	$-2/\sqrt{29}$
$\tan\theta$	$5/2$
$\csc\theta$	$-\sqrt{29}/5$
$\sec\theta$	$-\sqrt{29}/2$
$\cot\theta$	$2/5$

y/r
x/r
y/x
r/y
r/x
x/y

Point $(-2,-5)$



2. Sketch the line described below and fill in the values for the six trigonometric functions.

$3y + x = 0$ with $x \geq 0$

if $x = 3$,
$3y + 3 = 0$
$\Rightarrow y = -1$

$x = 3$
$y = -1$
$r = \sqrt{3^2 + (-1)^2}$
$= \sqrt{9+1}$
$= \sqrt{10}$

Trig functions	
$\sin\theta$	$-1/\sqrt{10}$
$\cos\theta$	$3/\sqrt{10}$
$\tan\theta$	$-1/3$
$\csc\theta$	$-\sqrt{10}$
$\sec\theta$	$\sqrt{10}/3$
$\cot\theta$	-3

y/r
x/r
y/x
r/y
r/x
x/y