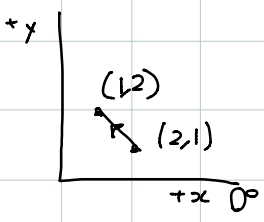
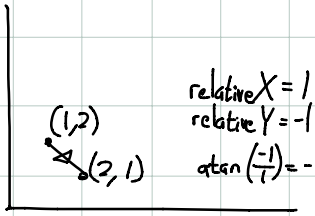
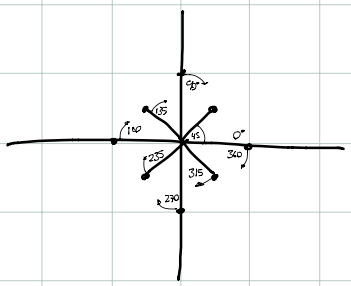


relative X = -1
relative Y = 1
$\text{atan}\left(\frac{1}{-1}\right) = -0.785$

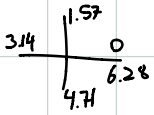


relative X = 1
relative Y = -1
$\text{atan}\left(\frac{-1}{1}\right) = -0.785$



desired $\text{atan}\left(\frac{y}{x}\right)$

y \ x	-	0	+
-	<3.14 >4.71	4.71	<4.71 >6.28
0	3.14	/	0
+	<1.57 >3.14	1.57	<0 >1.57

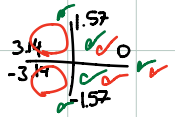


y \ x	-	0	+
-	+	+	+
0	+	+	+
+	+	+	+

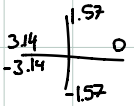
actual $\text{atan}\left(\frac{y}{x}\right)$

y \ x	-	0	+
-	$<$ $>$		$<$ $>$
0		/	
+	$<$ $>$		$<$ $>$

y \ x	-	0	+
-	+	+	+
0	+	+	+
+	+	+	+



actual atan2



y \ x	-	0	+
-	+	+	+
0	+	+	+
+	+	+	+

Conclusions:
- add 2π, not π
- use atan2
- change condition:
if (inputX < currentX)
to
if (goalAngle < 0)