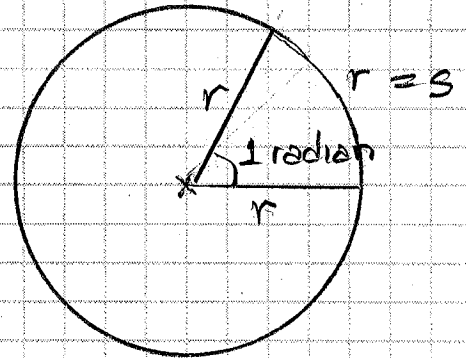


TRIGONOMETRIC FUNCTIONS OF REAL NUMBERS

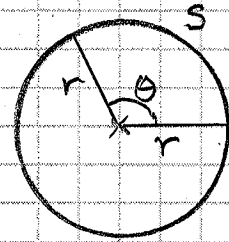
A central angle is an angle whose vertex is at the center of a circle.



A radian is a central angle that subtends (intersects) an arc of the same length as the radius.

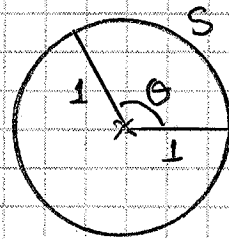
$$\theta = \frac{s}{r}$$

↑
in radians

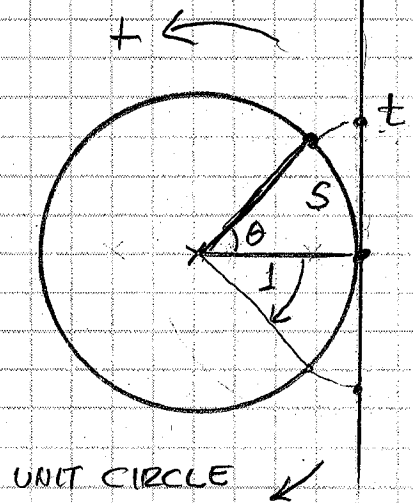
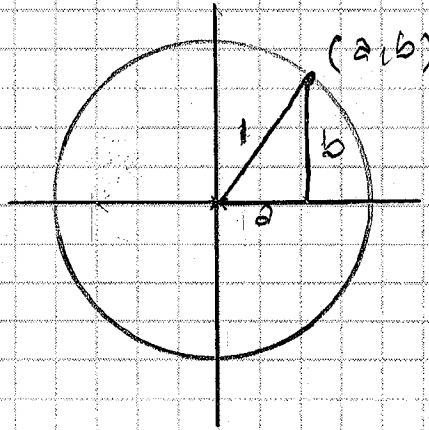


$$\theta = s$$

↑
radians



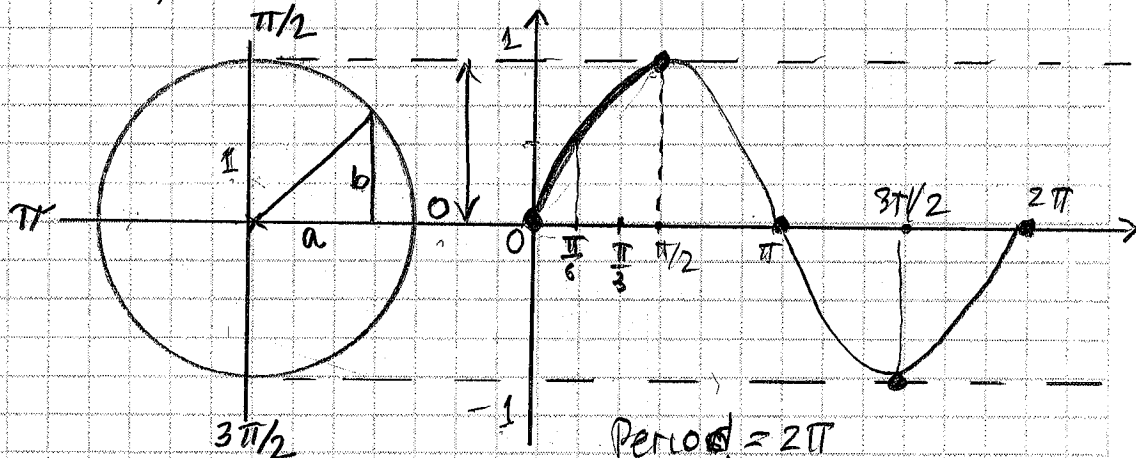
UNIT
CIRCLE
 $r=1$



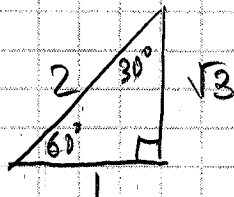
$$\begin{aligned} \sin t &= b & \cos t &= a \\ \tan t &= \frac{b}{a} & \cot t &= \frac{a}{b} \\ \sec t &= \frac{1}{a} & \csc t &= \frac{1}{b} \end{aligned}$$

$$f: \mathbb{R} \rightarrow \mathbb{R}$$

$$f(x) = \sin x$$



Period = 2π
Amplitude = 1



$$\pi = 180^\circ \quad \frac{\pi}{3} = 60^\circ \quad \frac{\pi}{6} = 30^\circ$$

$$\text{Domain}(\sin x) = \mathbb{R}$$

$$\text{Range}(\sin x) = [-1, 1]$$