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MATH@TD

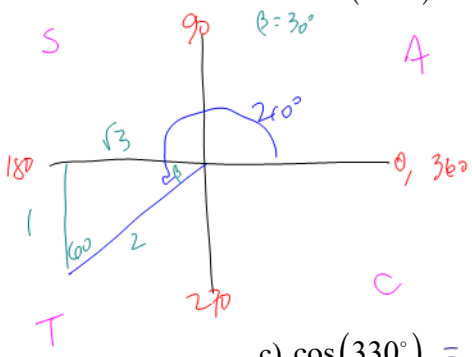
*MCR3U*

Name_____

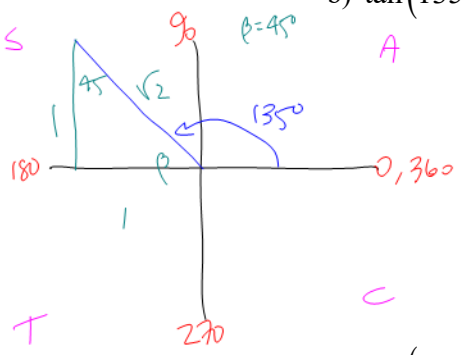
***Unit 5*** *– Trigonometric Ratios*
**Speed Quiz**: Angles of Rotation and Trig Ratios (Practice 4) **(No Calculators!!)**

1. Draw the **Angle of Rotation**. Determine the **Related Acute Angle**. Determine the trig ratios exactly (using SOH CAH TOA and CAST) *(1 point each)*

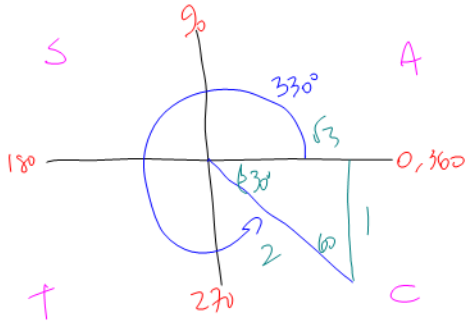
a) $\sin(210^\circ) = -\frac{1}{2}$



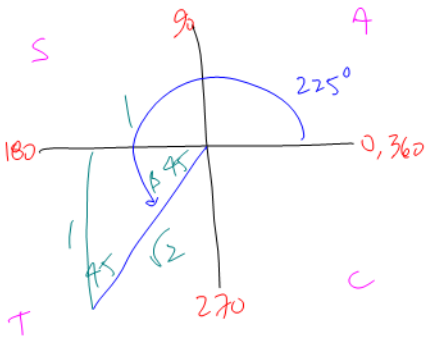

b) $\tan(135^\circ) = -1$



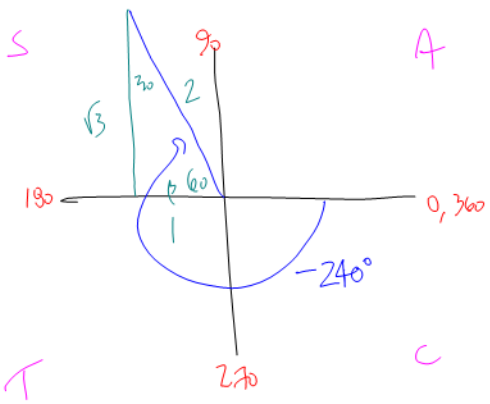

c) $\cos(330^\circ) = +\frac{\sqrt{3}}{2}$



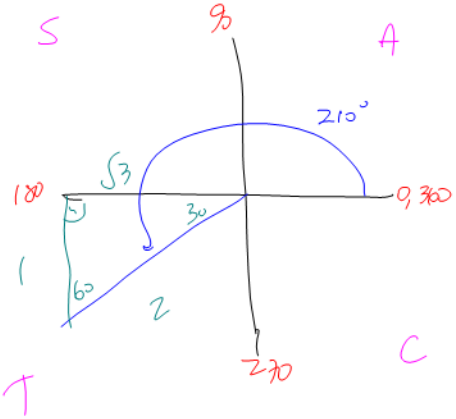

d) $\csc(225^\circ) = \frac{1}{\sin(225)} = -\frac{1}{\frac{1}{\sqrt{2}}} = -\sqrt{2}$




e) $\cos(-240^\circ) = -\frac{1}{2}$

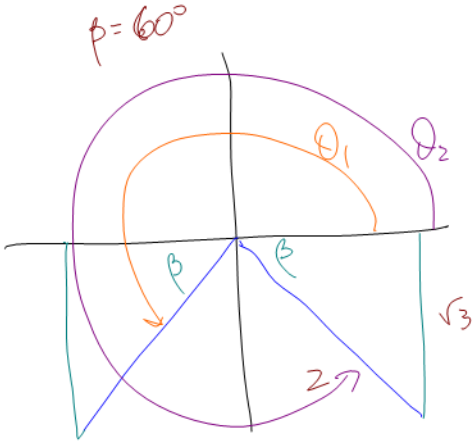



f) $\cot(210°) = \frac{1}{\tan(210)} = +\frac{1}{\frac{1}{\sqrt{3}}} = +\sqrt{3}$



2. For $0^\circ \le \theta \le 360^\circ$ , determine the angles of rotation given the trig ratio: (*2 marks each*)

a) $\sin(\theta) = -\frac{\sqrt{3}}{2}$ Q3, Q4

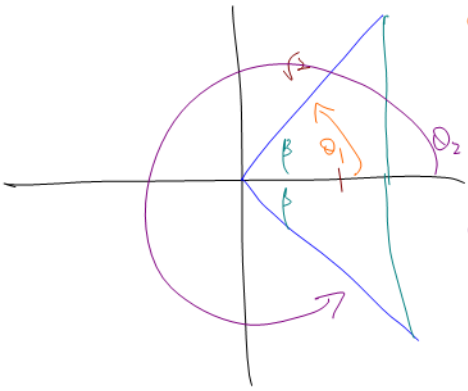



$\theta_1 = 180 + \beta$
$= 240^\circ$

$\theta_2 = 360 - \beta$
$= 300^\circ$

b) $\cos(\theta) = \frac{1}{\sqrt{2}}$ Q1, Q4

β = 45°

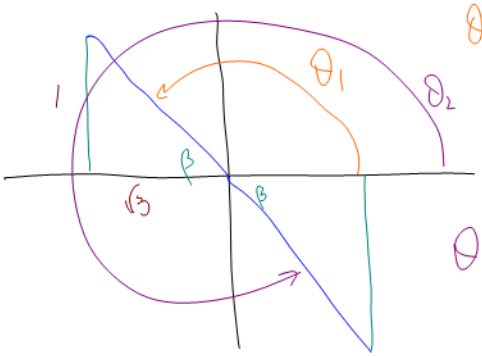



$\theta_1 = \beta$
$= 45^\circ$

$\theta_2 = 360 - \beta$
$= 315^\circ$

c) $\tan(\theta) = -\frac{1}{\sqrt{3}}$ Q2, Q4

β = 30°

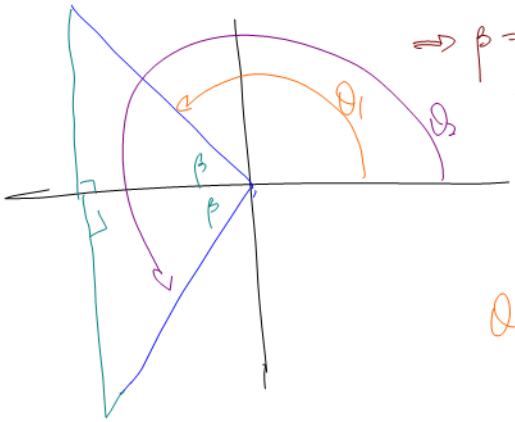



$\theta_1 = 180 - \beta$
$= 150^\circ$

$\theta_2 = 360 - \beta$
$= 330^\circ$

d) $\cos(\theta) = -0.2345$ Q2, Q3

$\cos(\beta) = +0.2345$
$\Rightarrow \beta = \cos^{-1}(0.2345)$
$\doteq 76^\circ$




$\theta_1 = 180 - \beta$
$= 104^\circ$

$\theta_2 = 180 + \beta$
$= 256^\circ$