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MATH@TD

MCR3U

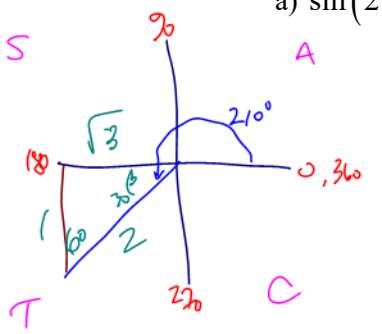
Name Solutions

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)*

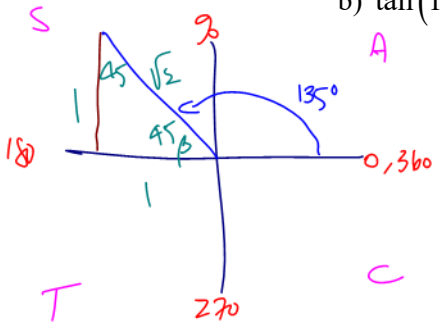
a) $\sin(210^\circ) = -\frac{1}{2}$

$\beta = 210 - 180 = 30^\circ$



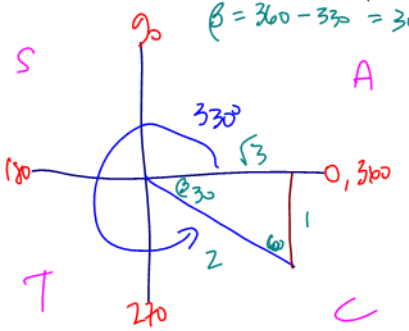
b) $\tan(135^\circ) = -1$

$\beta = 180 - 135 = 45^\circ$



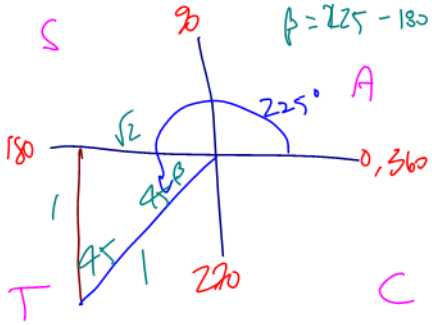
c) $\cos(330^\circ) = +\frac{\sqrt{3}}{2}$

$\beta = 360 - 330 = 30^\circ$



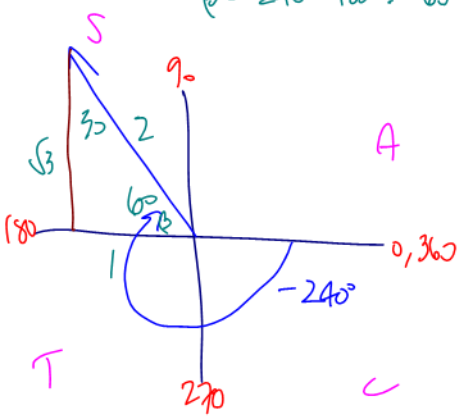
d) $\csc(225^\circ) = -\sqrt{2}$

$\beta = 225 - 180 = 45^\circ$



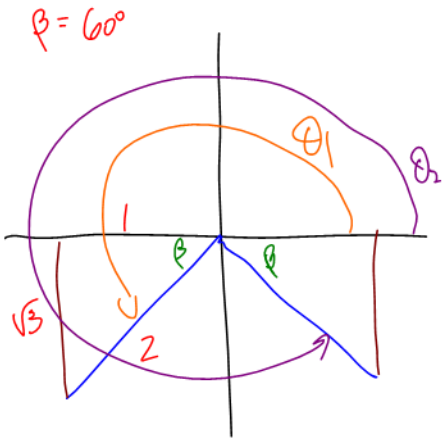
e) $\cos(-240^\circ) = -\frac{1}{2}$

$\beta = 240 - 180 = 60^\circ$



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

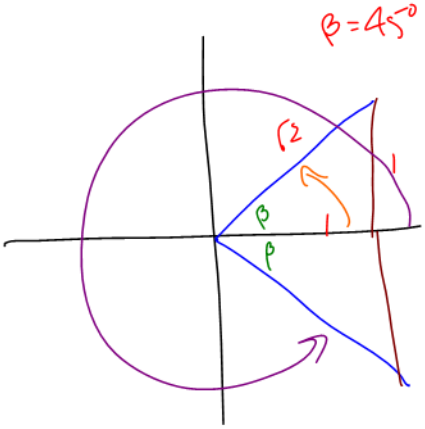
a) $\sin(\theta) = -\frac{\sqrt{3}}{2}$ Q3, Q4



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

$\theta_2 = 360 - 60$
$= 300^\circ$

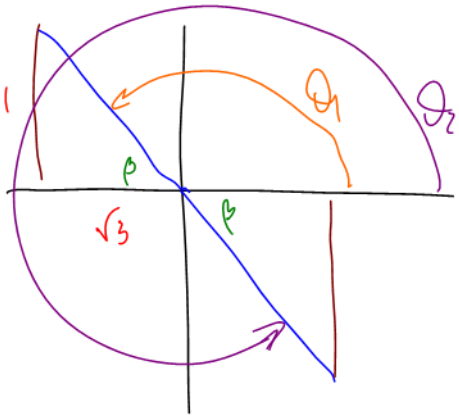
b) $\cos(\theta) = \frac{1}{\sqrt{2}}$ Q1, Q4



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

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

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



$\theta_1 = 180 - 30$
$= 150^\circ$

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