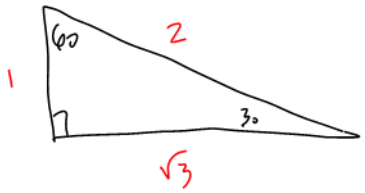

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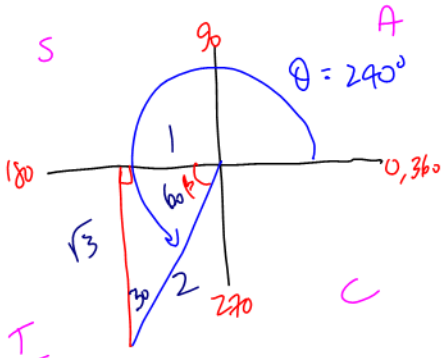
Unit 5 *– Trigonometric Ratios*

Speed Quiz (Practice 1): Angles of Rotation and Trig Ratios **(No Calculators!!)**

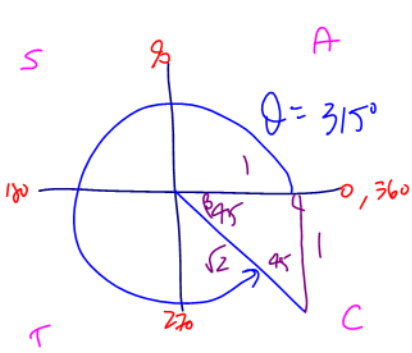
1. Draw the **Angle of Rotation**. Determine the **Related Acute Angle**. Determine the trig ratios exactly (using SOH CAH TOA and CAST) *(1 point each)*

a) $\tan(240^\circ)$



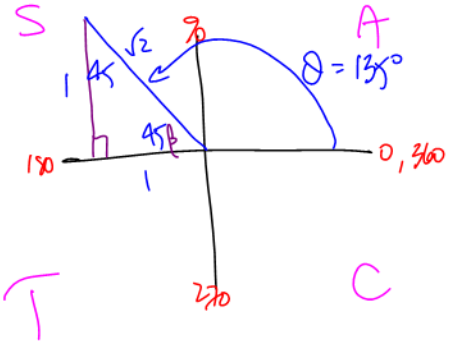
$\tan(240) = +\frac{\sqrt{3}}{1}$

b) $\sin(315^\circ)$

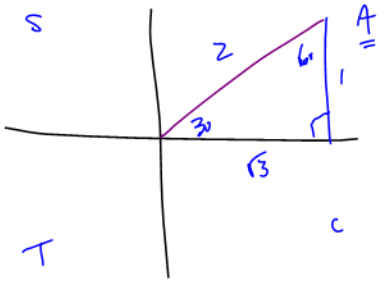


$\sin(315^\circ) = -\frac{1}{\sqrt{2}}$

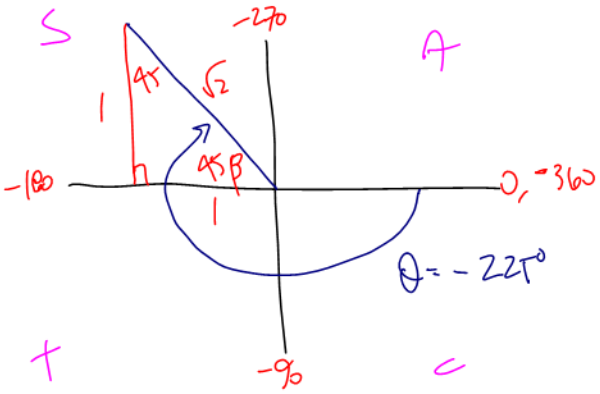
c) $\cos(135^\circ) = -\frac{1}{\sqrt{2}}$



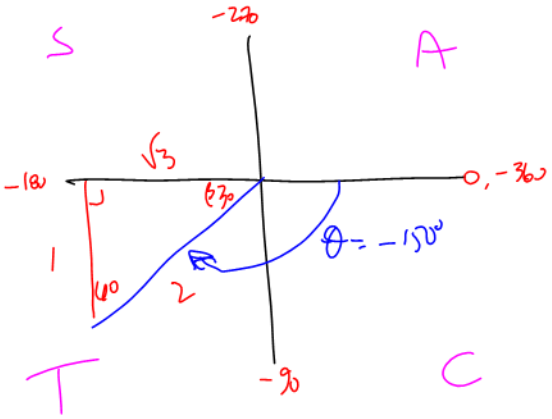
d) $\sin(30^\circ) = +\frac{1}{2}$

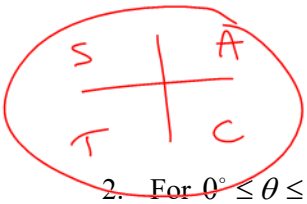


e) $\cos(-225^\circ) = -\frac{1}{\sqrt{2}}$



f) $\tan(-150^\circ) = +\frac{1}{\sqrt{3}}$



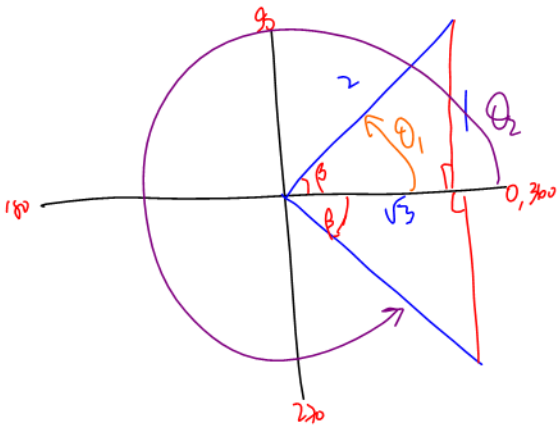


2. For $0^\circ \le \theta \le 360^\circ$, determine the angles of rotation given the trig ratio: (*2 marks each*)

a) $\cos(\theta) = \frac{\sqrt{3}}{2}$

Q1, Q4

$\beta = 30^\circ$



$\theta_1 = \beta = 30^\circ$

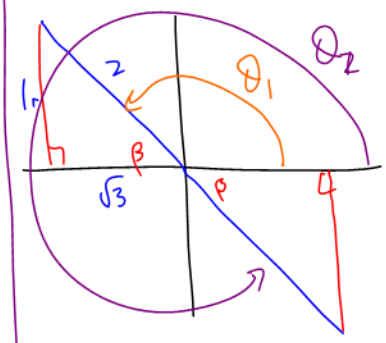
$\theta_2 = 360 - \beta$

$= 360 - 30$

$= 330^\circ$

b) $\tan(\theta) = -\frac{1}{\sqrt{3}}$

$\beta = 30$



$\theta_1 = 180 - \beta$

$= 180 - 30$

$= 150^\circ$

$\theta_2 = 360 - \beta$

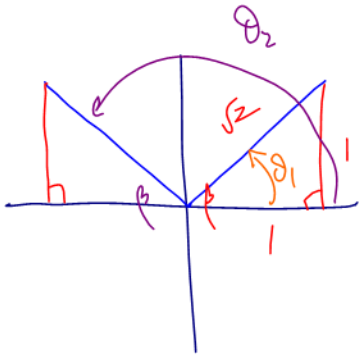
$= 360 - 30$

$= 330^\circ$

c) $\sin(\theta) = \pm\frac{1}{\sqrt{2}}$

Q Q

$\beta = 45^\circ$



$\theta_1 = 45^\circ$

$\theta_2 = 180^\circ - 45^\circ$

$= 135^\circ$

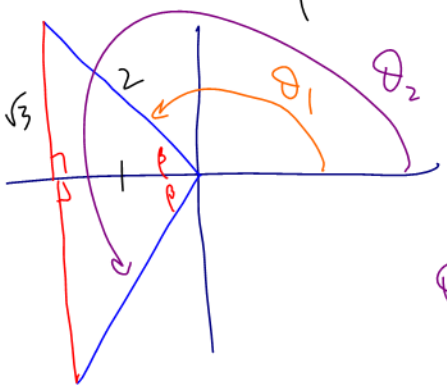
d) $\sec(\theta) = -2$

convert to primary trig

Q2, Q3

$\cos(\theta) = \pm\frac{1}{2}$

$\beta = 60^\circ$



$\theta_1 = 180 - \beta$

$= 120^\circ$

$\theta_2 = 180 + \beta$

$= 180 + 60$

$= 240^\circ$