

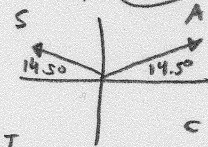
Trigonometry: Practice Quiz

1. Determine two angles between 0° and 360° for the following equations:

a) $\sin \theta = 0.25$

$$\theta = \sin^{-1}(0.25)$$

$$\theta \approx 14.5^\circ$$



$$\theta_2 \approx 180^\circ - 14.5^\circ$$

$$\approx 165.5^\circ$$

b) $\cot \theta = 4.2$

$$\frac{1}{\tan \theta} = 4.2$$

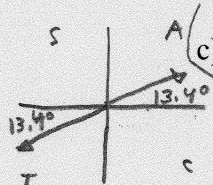
$$\tan \theta = \frac{1}{4.2}$$

$$\theta = \tan^{-1}\left(\frac{1}{4.2}\right)$$

$$\theta_1 \approx 13.4^\circ$$

$$\theta_2 = 180^\circ + 13.4^\circ$$

$$\approx 193.4^\circ$$



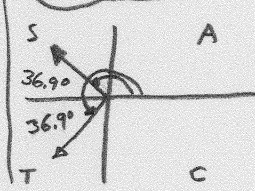
c) $\cos \theta = -0.8$

$$\theta = \cos^{-1}(-0.8)$$

$$\theta_1 \approx 143.1^\circ$$

$$\theta_2 = 180^\circ + 36.9^\circ$$

$$\approx 216.9^\circ$$



2. Determine two coterminal angles for the following angles in standard position:

a) 120°

$$\theta_1 = 120^\circ + 360^\circ$$

$$= 480^\circ$$

$$\theta_2 = 120^\circ - 360^\circ$$

$$= -240^\circ$$

b) -25°

$$\theta_1 = -25^\circ + 360^\circ$$

$$= 335^\circ$$

$$\theta_2 = -25^\circ - 360^\circ$$

$$= -385^\circ$$

c) 230°

$$\theta_1 = 230^\circ + 360^\circ$$

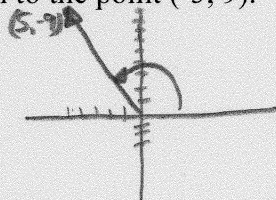
$$= 590^\circ$$

$$\theta_2 = 230^\circ - 360^\circ$$

$$= -130^\circ$$

Answers vary

3. Determine the angle in standard position and radius for a terminal arm that extends for the origin to the point $(-5, 9)$.



$$r^2 = x^2 + y^2$$

$$r^2 = (-5)^2 + (9)^2$$

$$r^2 = 25 + 81$$

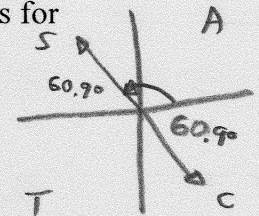
$$r = \sqrt{106}$$

$$\tan \theta = \frac{y}{x}$$

$$\tan \theta = \frac{9}{-5}$$

$$\theta = \tan^{-1}\left(-\frac{9}{5}\right)$$

$$\theta = -60.9^\circ$$

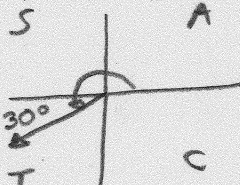
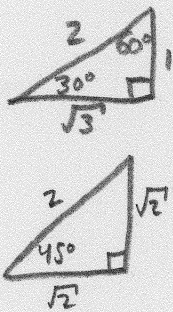


$$\theta = 180^\circ - 60.9^\circ$$

$$\approx 119.1^\circ$$

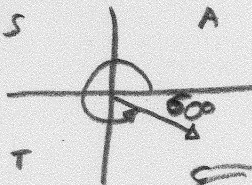
4. Determine the exact values of the following:

a) $\sin(210^\circ)$



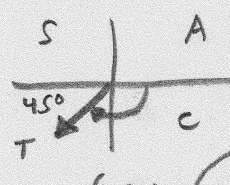
$$= -\sin(30^\circ) = -\frac{1}{2}$$

b) $\tan(300^\circ)$



$$= -\tan(60^\circ) = -\sqrt{3}$$

c) $\cos(-135^\circ)$



$$= -\cos(45^\circ) = -\frac{\sqrt{2}}{2}$$

5. If $P(x, y)$ is a point on the unit circle, what are the coordinates of this point when the angle in standard position is 225° ?

$$x = r \cos \theta$$

$$= 1 \cos 225^\circ$$

$$= -0.71$$

$$y = r \sin \theta$$

$$= 1 \sin 225^\circ$$

$$= -0.71$$

Coordinates of P are $(-0.71, -0.71)$