Pre-Calculus Math 12

Chapter 6: Trigonometric Functions

Lesson 1: Angles and the Coordinate Plane - Degree

Question #1

Reference Q.12361

Sketch the following rotation angles in standard position, and state the quadrant in which the angle terminates.

a. $160°$

b. $318°$

c. $-26°$

d. $569°$

e. $-595°$

Question #2

Reference Q.12362

Which of the following angles are coterminal with $80°$?

a. $800°$

b. $-100°$

c. $-280°$

d. $280°$

Question #3

Reference Q.12363

In each case

i) determine the angle(s), θ, in the domain $-360° \leq \theta \leq 360°$, which is coterminal with the given angle

ii) write an expression involving the principal angle that represents all angles in the domain $\theta \in \mathbb{R}$ that are coterminal with the given angle

a. $320°$

ii.

iii.

b. $-81°$

iii.

iv.

c. $415°$

iv.

v.

Question #4

Reference Q.12364

Determine the reference angle for the following rotation angles.

a. $128°$

b. $285°$

c. $2°$

d. $269°$

Question #5

Reference Q.12365

In each case, sketch the rotation angle and state the reference angle.

a. $-300°$

b. $1100°$

c. $-109°$

d. $820°$

e. $540°$

f. $-270°$

Question #6

Reference Q.12366

a. Sketch a diagram to show a reference angle of $60°$ in each of quadrants one to four.

b. State the measure of the rotation angle in each quadrant.

c. Let $P(1, \sqrt{3})$ be a point on the terminal arm of the rotation angle in quadrant one. State the coordinates of points Q, R, and S which are on the terminal arms of the rotation angles in quadrant two, quadrant three, and quadrant four respectively.

Question #7

Reference Q.12367

a. Sketch a rotation angle of $-208°$ in standard position.

b. Determine four angles between $0°$ and $360°$ which have the same reference angle as a rotation angle of $-208°$.

c. Determine three angles between $-720°$ and $720°$ which are coterminal with a rotation angle of $-208°$.

d. Write an expression involving the principal angle that represents all angles in the domain $\theta \in \mathbb{R}$ that are coterminal with a rotation angle of $-208°$.

Question #8

Reference Q.12368

Complete the following table.

Reference Angle	Rotation Angle in:			
	Quad 1	Quad 2	Quad 3	Quad 4
37°				
$\theta°$				
		177°		
			225°	
				299°

Question #9

Reference Q.12369

An angle of $-483°$ in standard position terminates in quadrant

A. one
B. two
C. three
D. four

Question #10

Reference Q.12370

Which one of these four rotation angles is not coterminal with the other three?

A. $-218°$
B. $158°$
C. $518°$
D. $-562°$

Question #11

Reference Q.12371

A student makes four statements connecting rotation angles and reference angles.

Statement I: In quadrant 1, the rotation angle is equal to the reference angle.

Statement II: In quadrant 2, the rotation angle is equal to $90°$ plus the reference angle.

Statement III: In quadrant 3, the rotation angle is equal to $180°$ plus the reference angle.

Statement IV: In quadrant 4, the rotation angle is equal to $270°$ plus the reference angle.

The statements which are true are

A. I and III only
B. II and IV only
C. I, II, and IV only
D. I, II, III, and IV

Question #12

Reference Q.12372

An angle $x°$ is coterminal with an angle of $-163°$. If $0° < x < 360°$, the value of x is ___.