

Pre-Calculus 11 - VLN

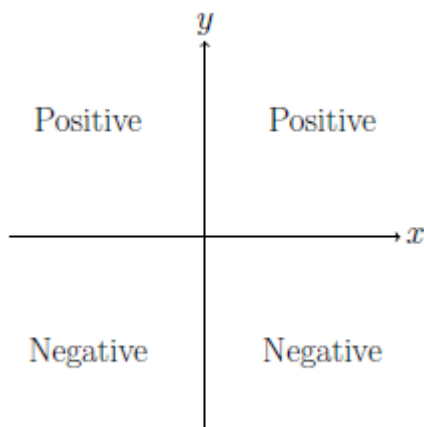
Chapter 6: Trigonometry

Lesson 8: Solving Trigonometric Equations

Question #1

Reference Q.18977

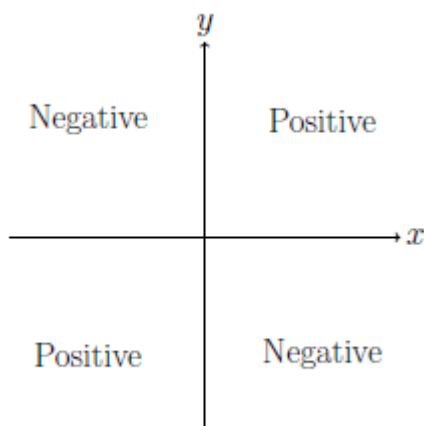
Let θ be an angle in the interval: $0^\circ \leq \theta \leq 360^\circ$. Which of the three trigonometric ratios of θ satisfies the following?



Question #2

Reference Q.18978

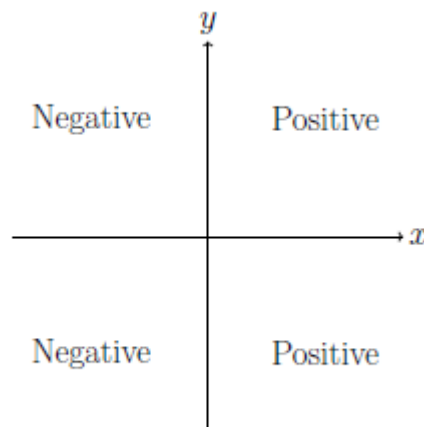
Let θ be an angle in the interval: $0^\circ \leq \theta \leq 360^\circ$. Which of the three trigonometric ratios of θ satisfies the following?



Question #3

Reference Q.18979

Let θ be an angle in the interval: $0^\circ \leq \theta \leq 360^\circ$. Which of the three trigonometric ratios of θ satisfies the following?



Question #4

Reference Q.18980

If $\sin \theta > 0$ and $\cos \theta > 0$, which of the following is a correct interval of θ ?

- A. $0^\circ < \theta < 90^\circ$
- B. $90^\circ < \theta < 180^\circ$
- C. $180^\circ < \theta < 270^\circ$
- D. $270^\circ < \theta < 360^\circ$

Question #5

Reference Q.18981

If $\cos \theta < 0$ and $\tan \theta > 0$, which of the following is a correct interval of θ ?

- A. $0^\circ < \theta < 90^\circ$
- B. $90^\circ < \theta < 180^\circ$
- C. $180^\circ < \theta < 270^\circ$
- D. $270^\circ < \theta < 360^\circ$

Question #6

Reference Q.18982

If $\sin \theta < 0$ and $\cos \theta > 0$, which of the following is a correct interval of θ ?

- A. $0^\circ < \theta < 90^\circ$
- B. $90^\circ < \theta < 180^\circ$
- C. $180^\circ < \theta < 270^\circ$
- D. $270^\circ < \theta < 360^\circ$

Question #7

Reference Q.13405

The solution of the equation $\cos x = 0.0999$ in the interval $0^\circ \leq x \leq 360^\circ$ is

- A. $84^\circ, 276^\circ$
- B. $96^\circ, 264^\circ$
- C. $96^\circ, 276^\circ$
- D. $264^\circ, 276^\circ$

Question #8

Reference Q.18983

Assume $0^\circ \leq \theta \leq 360^\circ$. Use a calculator to solve $\tan \theta = \frac{1}{5}$.

Question #9

Reference Q.18984

Assume $0^\circ \leq \theta \leq 360^\circ$. Use a calculator to solve $\cos \theta = -\frac{3}{5}$.

Question #10

Reference Q.13374

Solve the following equations, where $0^\circ \leq \theta \leq 360^\circ$.

- a. $\cos \theta = \frac{1}{2}$
- b. $\sin \theta = -\frac{\sqrt{3}}{2}$
- c. $\tan \theta = -1$

Question #11

Reference Q.13378

Determine the measure of A if $0^\circ \leq A \leq 360^\circ$.

- a. $\tan A = 0$
- b. $\cos A = 1$
- c. $\sin A = -1$
- d. $\sin A = 0$

Question #12

Reference Q.18985

Assume $-180^\circ \leq \theta \leq 180^\circ$. Use a calculator to solve

$$\sin \theta = -\frac{1}{4}.$$

Question #13

Reference Q.18986

Without using technology, determine the exact value(s) of θ where

$$\sin \theta = -\frac{\sqrt{2}}{2}, \quad -180^\circ \leq \theta \leq 180^\circ.$$

Question #14

Reference Q.19075

Without using technology, determine the exact value(s) of θ where

$$\cos(\theta) = \frac{1}{2}, \quad -270^\circ \leq \theta \leq 90^\circ.$$

Question #15

Reference Q.19076

Without using technology, determine the exact value(s) of θ where

$$\tan(\theta) = -\frac{1}{\sqrt{3}}, \quad -270^\circ \leq \theta \leq 90^\circ.$$

Question #16

Reference Q.13298

Without using technology, determine the exact value(s) of θ where

- a. $\sin \theta = \frac{\sqrt{2}}{2}, 0^\circ \leq \theta \leq 360^\circ$
- b. $\cos \theta = -\frac{1}{2}, 0^\circ \leq \theta \leq 360^\circ$
- c. $\tan \theta = -\frac{\sqrt{3}}{3}, 0^\circ \leq \theta \leq 360^\circ$
- d. $\tan \theta$ is undefined, $0^\circ \leq \theta \leq 360^\circ$

Question #17

Reference Q.13311

Determine the exact measure of θ where $0^\circ \leq \theta \leq 360^\circ$.

a. $\sin \theta = -\frac{\sqrt{3}}{2}$

b. $\tan \theta = \frac{\sqrt{3}}{3}$

c. $\cos \theta = -\frac{1}{2}$

d. $\sin \theta = 1$

e. $\cos \theta = 1$

f. $\tan \theta = 1$

g. $\sin \theta = -1$

h. $\cos \theta = -1$

i. $\tan \theta = -1$

j. $\sin \theta = 0$

k. $\cos \theta = 0$

l. $\tan \theta = 0$

Question #18

Reference Q.13406

For $0^\circ < \theta < 180^\circ$, the solution, to the nearest degree, of the equation $\cos \theta = -\frac{1}{3}$ is ____.

Question #19

Reference Q.19077

Solve $\sin^2 x - 1 = 0$, where $0^\circ \leq x \leq 360^\circ$.

Question #20

Reference Q.19078

Solve $2 \cos^2 x - 3 \cos x + 1 = 0$, where $0^\circ \leq x < 360^\circ$.

Question #21

Reference Q.19079

Solve $\tan^2 x - \tan x = 0$, where $0^\circ < x \leq 360^\circ$.