Grade 12 GEN

Lesson 9-5
Graphing Other Trigonometric Functions

Mathematics

Module-8- 2025-2026

وزارة التربية و التعليم

Term-3

Trigonometric Functions

MR Rachid K

Objectives

Graph and analyze Tan ,cotan and reciprocal trigonometric functions

1- $y = \tan 3x$

Function	Vertical Asymptote	Vertical Asymptote	Intermediate Point	x-intercept	Intermediate Point
$y = \tan x$	$x = -\frac{\pi}{2}$	$x = \frac{\pi}{2}$	$\left(-\frac{\pi}{4}, -1\right)$	$(0, 0)$	$\left(\frac{\pi}{4}, 1\right)$
$y = \tan 3x$					

$x = -\frac{\pi}{6}$ $\left(-\frac{\pi}{12}, -1\right)$ $(0, 0)$ $\left(\frac{\pi}{12}, 1\right)$ $x = \frac{\pi}{6}$

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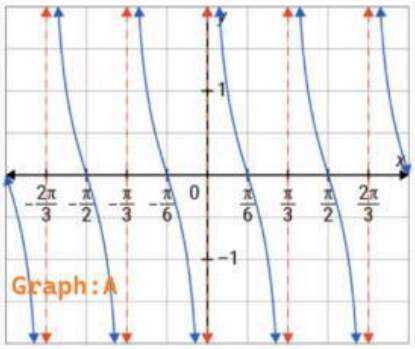

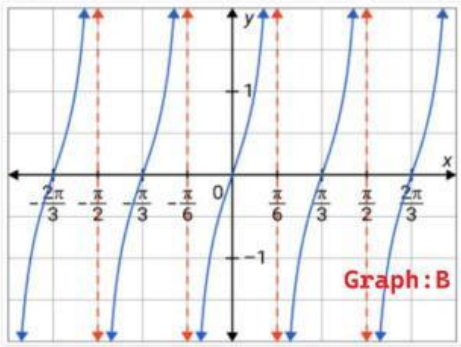

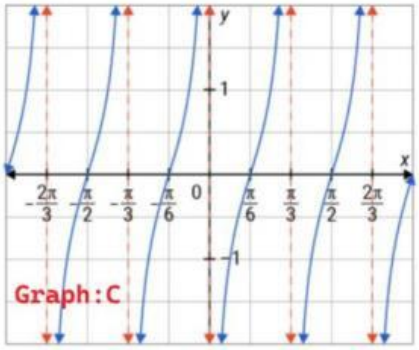

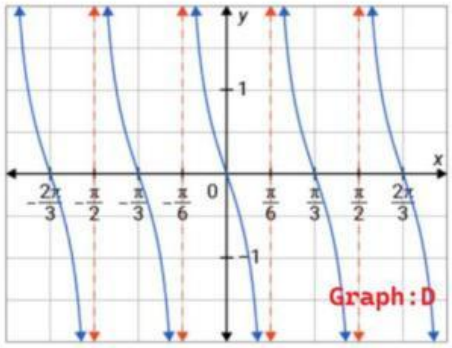

Select the graph of

$y = \tan 3x$

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2- $y = -\tan\left(x + \frac{2\pi}{3}\right)$.

Function	Vertical Asymptote ⟸	⟹ Vertical Asymptote	Intermediate Point ⬀	x-intercept	Intermediate Point ⬂
$y = \tan x$	$x = -\frac{\pi}{2}$	$x = \frac{\pi}{2}$	$\left(-\frac{\pi}{4}, -1\right)$	$(0, 0)$	$\left(\frac{\pi}{4}, 1\right)$
$y = -\tan\left(x + \frac{2\pi}{3}\right)$					

$\left(-\frac{11\pi}{12}, 1\right)$ $\left(-\frac{2\pi}{3}, 0\right)$ $\left(-\frac{5\pi}{12}, -1\right)$ $x = -\frac{7\pi}{6}$ $x = -\frac{\pi}{6}$

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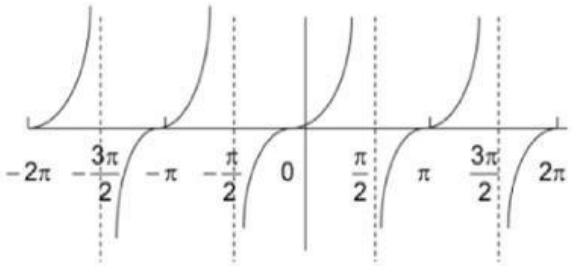
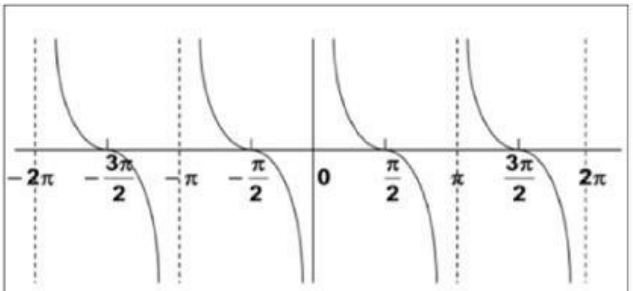


This is the graph for a. **y = tan x.** b. **y = cot x.**



This is the graph for a. **y = tan x.** b. **y = cot x.**

K-RACHID

LIVEWORKSHEETS