

Holiday package

S5PCB

GS ST PHILIPPE NERI

ACADEMIC YEAR :2025-2026

1. Solve: $\cos x = -1/2$ on $0 \leq x \leq 2\pi$.
2. Explain how trigonometry is applied in simple harmonic motion.
3. Find the sum to infinity of $16 + 12 + 9 + \dots$
4. Insert 2 harmonic means between 3 and 10
5. Solve: $\log_5(x + 1) = 2$
6. A population grows by 2% continuously; after how long does it double?
7. Simplify $\cos^{-1}(\sin x)$ using identities.

Solve the system using matrices:

$$\begin{cases} x + 2y + 3z = 9 \\ 2x - y + z = 2 \\ 3x + y - z = 3 \end{cases}$$

8.

Determine whether the vectors

$$(1, 2, 3), \quad (2, 4, 6), \quad (-1, -2, -3)$$

are linearly dependent or linearly independent.

9.

Given

$$\mathbf{F} = (1, 2, -1)$$

and displacement

$$\mathbf{d} = (k, -2, 2),$$

find all values of k for which the force does **no work** on the object.

10.

End